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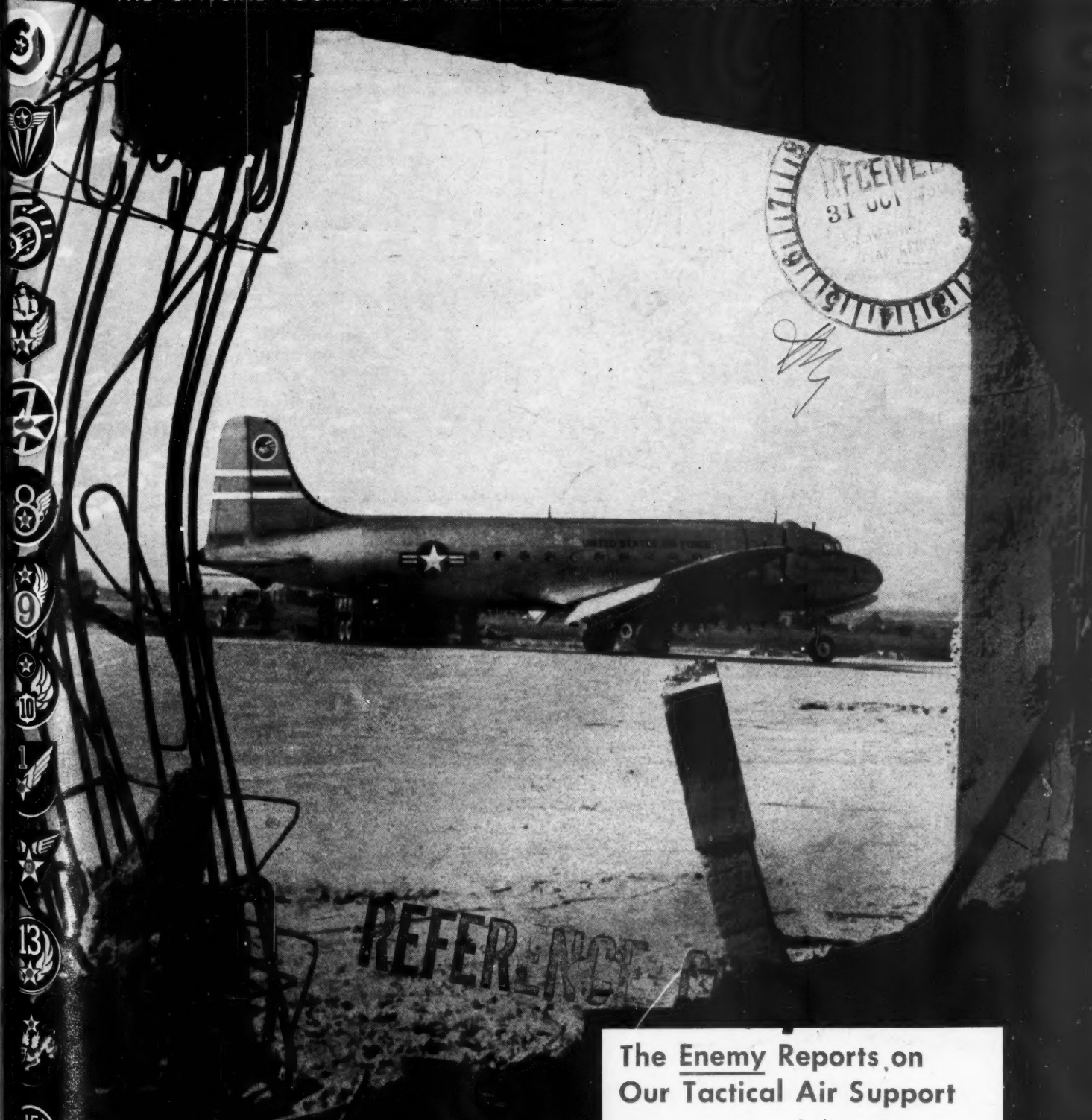
AIR FORCE

THE OFFICIAL JOURNAL OF THE AIR FORCE ASSOCIATION, NOVEMBER, 1950



BACK TO KIMPO
A Familiar Pattern—Retreat and Return

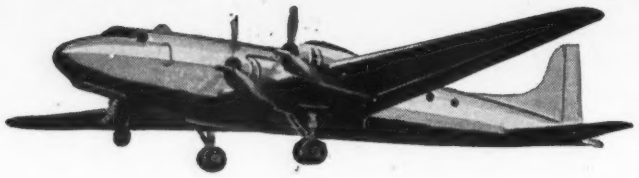
The Enemy Reports on Our Tactical Air Support

•

How Reserve Recall Works

•

Your Chances are Better If You Know the A-Bomb



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AIR FORCE

THE OFFICIAL JOURNAL OF THE AIR FORCE ASSOCIATION

NOVEMBER, 1950 VOL. 33, No. 11

THIS IS AFA

The Air Force Association is an independent, non-military, airpower organization with no personal, political or commercial axes to grind; established and incorporated as a non-profit corporation February 4, 1946.

Active Members are men and women honorably discharged from military service who have been assigned or attached to the US Air Force or its predecessor services, or who are currently enrolled in the Air Force Reserve or Air National Guard. **Service Members** (non-voting, non-office holding) are men and women currently assigned or attached to the US Air Force. **Associates** (non-voting, non-office holding) are men and women not eligible for Active or Service Membership who have demonstrated an interest in furthering AFA's aims and purposes, or in proper development and maintenance of US airpower.

ITS OBJECTIVES

To preserve and foster the spirit of fellowship among former and present members of the Air Force, and to perpetuate the identity and group solidarity of wartime Air Force units large and small.

To assist in obtaining and maintaining adequate airpower for national security and world peace.

To keep AFA members and the public at large abreast of developments in the field of aviation, and to stimulate community interest in Air Force activities and installations.

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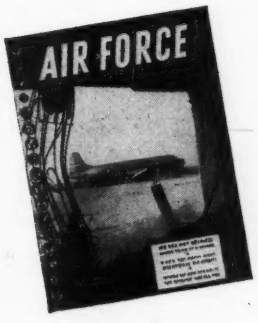

THE COVER

Although little has been written about it, one of the most successful operations of the UN offensive in Korea has been the airlift from southern Japan to bases far up the Korean line. Secret planning for the lift began in mid-July when Gen. William Tunner got orders in Washington to come to Tokyo at once. Three weeks later the lift was ready to go.

READ "FOURTH IN A SERIES" PAGE 10

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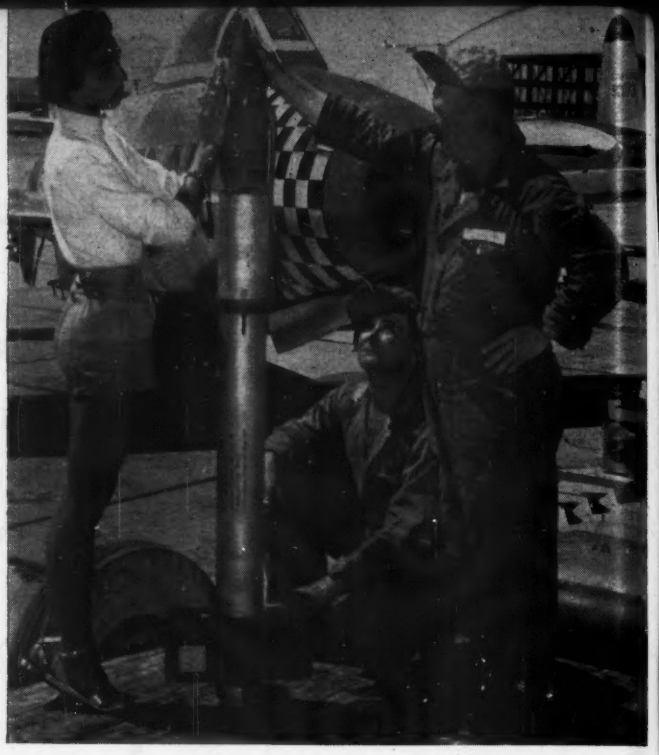
If Sgt. Francis J. Ciandelli, above, really thinks his legs are a match for those of that pretty school marm, even his best friends ought to tell him. Jackie rides with the gag, but below, from atop an Air Force fire truck, she sees something of what she came for: the famous Acrojets (upper right) demonstrating the utmost in precision flying.



A far cry from the 4th of July rocket that yesterday's kids used to know is this five inch baby now being used so effectively in Korea. In background is a Republic F-84E which can carry as many as thirty-two rockets of this type.

Flightline Lyceum

It's not always easy for today's school marm to keep a hop, skip and a Mach number ahead of her pupils. Time was when a basic knowledge of the three Rs and a firm grip on the willow reed was all a teacher needed to set up shop. But in the jet era of today, a school teacher needs a working knowledge of modern aviation if she hopes to be able to carry on a simple conversation with her pupils.

In Los Angeles' progressive Wonderland School, many of the kids come from the homes of aviation experts where the "sonic wall" has been a household subject of conversation for many years.

Young and pretty Jackie Neisner, who handles the eight to ten year old jet cats at Wonderland took advantage of a Las Vegas vacation to get a once over lightly on what's new in the air by visiting the Air Force fighter trainer school and the gunnery range. She talked with pilots and airmen who fly and maintain the jets, watched them load and shoot and then evaporate into the blue Nevada sky. Now she's ready to take on the kids.

Along with reading, writing and 'rithmetic, students at Jackie Neisner's school learn model plane making. Here Jackie gives her gang the latest poop on the latest jet. From the looks of these engineers she'd better know what she is talking about.

First in
SAFETY
Getting urgently needed equipment and supplies to troops in difficult terrain has always been a decisive factor in warfare. Stanley Switlik and other pioneer parachute manufacturers reasoned that the materials could be dropped with properly designed parachutes. Then began the experiments with cloth and design from which grew today's cargo chutes. Thanks to this research and development, it is now possible to safely drop delicate equipment, medical supplies, food and other materials.
Another *first* through research for greater safety.
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SWITLIK
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LALOR AND HANCOCK STREETS, TRENTON, NEW JERSEY, U. S. A.

a Great Name Carries On..

WARNER!

FOR years, the Aviation Industry has respected the name "Warner" in aircraft hydraulics.

Always it has meant *quality and precision work of the highest calibre.*

Now, reorganization has breathed new vitality into its research, management and production.

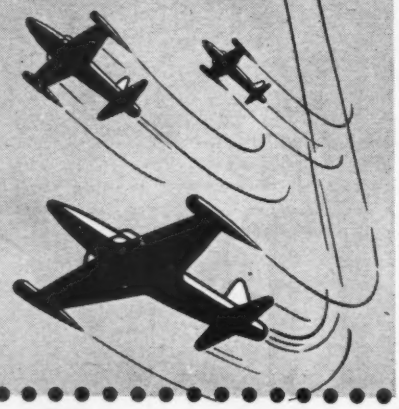
Warner is in the Aviation Industry to stay.

It continues as always to make its famed Hydraulic Valves.

Besides this new leadership, the only change is from the name Warner Aircraft Corp. to Warner Division, Clinton Machine Company.

You can expect even greater things from Warner—sound improvements, finer products—

Products worthy of carrying on the great name they bear!



Warner DIVISION
Clinton Machine Company

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AIR MAIL

Brickbat

Gentlemen: Excuse the mistakes I make in the following letter because I am just a little bit sick from reading your editorial and other articles in the September 1950 issue of AIR FORCE. I just happened to pick up the issue and although you have, no doubt, already "eaten" most of the mush that you published I just couldn't resist putting in my two-bits worth. As time goes on, and more and more of our men die in Korea, I think that the people of this country will see that Crommelin, Forrestal, etc. were much wiser and better informed than the "Strategic Bombing" boys. More than that, it must be plain *who is putting* their branch of the service ahead of the Country and everything else. It is agreed that a strong "Strategic Bombing" force is needed but it must feel good to the South Koreans to see their cities demolished by their "Friends". It is too late now and we must do it but it is that "Strategic Bombing baloney" that got us into this jam.

Mrs. N. F. Velasquez
Norfolk, Virginia

• *How can you ask us to excuse mistakes like those?*

Charlotte Knight and AFA

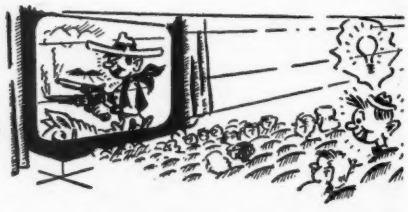
Gentlemen: I believe the foremost objectives of Air Force Association in the coming year are: (1) to assist in obtaining and maintaining adequate airpower for national security and world peace through public education, and (2) to interest all former and present members of the Air Force in Air Force Association so that they will want to become members, take part in our activities, and help us reach our goal. Our problem is, how can we fulfill these objectives? I have picked up my copy of the August edition of AIR FORCE magazine. And, as I have done several times before, I read Charlotte Knight's account of the War in Korea. I believe Charlotte Knight has given us a means to fulfill our objectives. Her story of the Korean War is without doubt an outstanding journalistic achievement. She has told her story as she saw it. She has flown combat missions with our gallant airmen. She has told of the lack of tactical air power during the early stages. She has talked to the crews who fly and maintain our aircraft. She has told of the need of electronic equipment which would enable our airmen to lick foul weather. She has spoken of the electronic equipment destroyed at the close of World War II. By doing such, she has carried our message to the people of this nation. Charlotte Knight is our Charlotte Knight. Because she is a part of Air Force Association, she has carried our message to all former and present members of the Air Force.

Albert E. Miles
Central Falls, R. I.

• *It was with mixed feelings that the editors of* Air Force *learned recently that Charlotte Knight had been appointed Associate Editor of Colliers and that her contract with them forbade her to write for other publications. We were glad for Charlotte's sake, since this is a fine opportunity for her and a much-deserved recognition of the splendid job she has been doing in Korea. But from a selfish viewpoint, the end of an association as fruitful as ours had been with Charlotte was a hard blow to take. It will be difficult to get along without her. To our readers, however, we promise continued top-notch reports from the Far East, the first of which appears on page 29.*

Too many movies?

Gentlemen: The letter from Mr. Raymond S. Fanning published in the "Air Mail" column of AIR FORCE for July 1950 makes most interesting reading in



the light of current developments in Korea. Wrote Mr. Fanning: ". . . when is someone . . . going to point out that strategic air power and atomic weapons offer us, for the first time in the history of man, a complete and effective international peace-restoring device? Use of these weapons to exact a quick fine—payable in factories—for a breach of world peace is the attainment of practically a moral millennium compared to the moral waste and devastation of old-fashioned wars between land armies or the starvation-blockades of innocent people by sea fleets." Mr. Fanning closes his letter with: "Or have I been looking at too many Western movies?" In the light of the history of the last month, it looks like Mr. Fanning has.

F. Lee
Honolulu, T. H.

• *And tell us Capt. Lee, do you think the Russians and the Red Chinese would have kept their fingers out of the pie this long if it hadn't been for the threat of strategic airpower?*

Gear your company to a faster selling pace . . . with a company-owned

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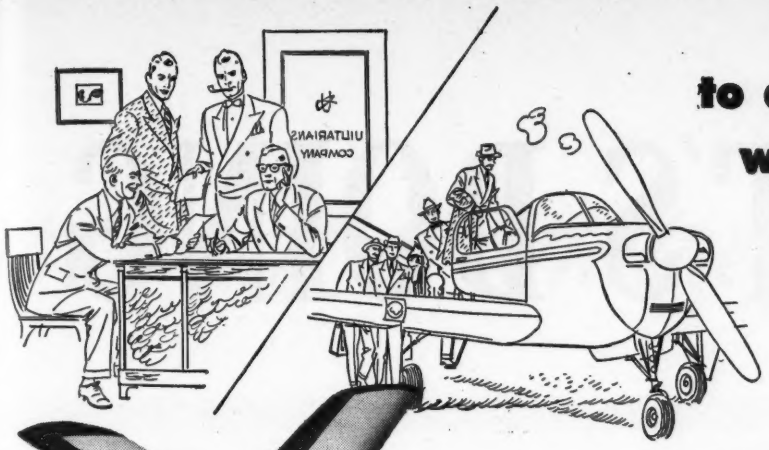
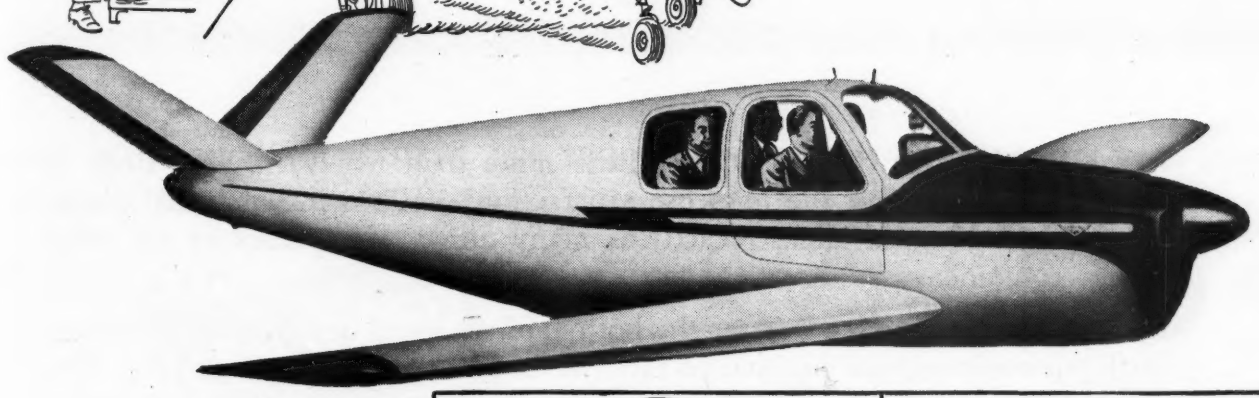




There's more time for field work when you cruise there and back at 170 mph. Your executives "take off and go" on their *own* schedule because this completely equipped plane is ready for action — day or night.

"At home" on big city airport or short field alike. New Beechcraft propeller adds to take-off performance. Take-off hp rating increased to 196 at 2450 rpm. Steerable nose-wheel for better maneuverability.

Plenty of room for "sample" cases! Oversize baggage compartment. And it's easy to get at, inside or out. Entrance from cabin is zippered. Want *more* luggage room? Back seat removable in three minutes flat!

Remarkably low operating costs make treasurers happy! Fuel consumption 9.5 gallons per hour. Just 56% of engine's rated horsepower used while cruising. Means fewer engine repairs—an extra safety margin.

No "travel fatigue"—even on long trips. The Bonanza gives you a 750-mile range...and it will be completely *comfortable* travel in the sound-proofed, roomy cabin. Four can ride in stretch-out comfort.

Safety far beyond usual standards. All-metal framework is stronger than conventional construction. In shock and stress tests it far surpassed CAA requirements. Wide, long wheel base is *rugged*; smooths rough landings.

Because it's designed to excel in not just one category but in *all* important ones, the Model B35 Beechcraft Bonanza is the leading seller in its class. Inspect it today at your Beechcraft distributor's or dealer's. Or write for full information on your company letterhead to Beech Aircraft Corporation, Wichita, Kansas, U. S. A.

Top speed, 184 mph
Cruising speed, 170 mph
Range, 750 miles
Fuel economy, 9.5 gph

Beechcraft

BONANZA

BEECHCRAFTS ARE THE AIR FLEET OF AMERICAN BUSINESS

WHAT'S DOING

When World War II ended, just a little more than five years ago, Pratt & Whitney Aircraft had the immense satisfaction of knowing that its piston engines had powered almost exactly as many allied war planes as all other makes combined.

But we were then just about at the bottom of the list as designers and builders of the new gas turbine engines. In fact, we hadn't built a single turbine. The reason? The military demand for our reciprocating types had been so great, right up to V-J Day, that we were not permitted to do more than a token amount of research and engineering on gas turbines. Yet British, German and American jets were already flying, and several other American manufacturers were hard at work on their own designs.

As the war drew to a close, however, we began intensive design and development work on gas turbines. That was in the summer of 1945. We started with the realization that we had a very tough job on our hands to catch up with the others and to stay in business.

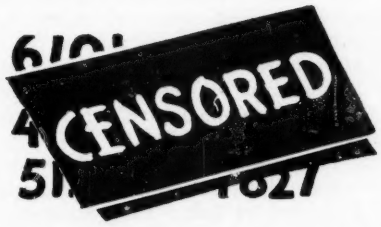
But we did it. Just a few weeks ago, we proudly watched the first flight tests of *the most powerful turboprop engine* that has ever flown, the Pratt & Whitney T-34 Turbo-Wasp. Work on this project had started five long years before, under Navy auspices. Meantime, we had already reached the production stage on *the most powerful turbojet engine* flying in the United States, the J-48 Turbo-Wasp, and on the smaller J-42, both developed in collaboration with Rolls-Royce. In addition, we have continued to refine and produce, in increasing quantities, the Wasp Major, *most powerful reciprocating engine* in the aircraft world.

Reaching this height was a real up-hill climb, and we think it points up a moral. It's this: Real progress in this aviation business is not easily or quickly achieved.

The story of these past five years at Pratt & Whitney is one of headaches and heartaches and midnight oil, of millions of man-hours of hard work and of millions of dollars risked to reach the goal. The next five years — or ten — won't be any different. We must continue to devote our skill, our energy, our time, and our money to one task — developing superior aircraft power plants. Only by doing this faithfully can we help maintain the air supremacy without which this country cannot survive.

...at Pratt & Whitney Aircraft?

HOW MANY MAN-HOURS HAVE WE SPENT ON GAS TURBINE DEVELOPMENT?



The answer to this question is a very impressive figure and we'd like to publish it here, but to disclose it would reveal restricted information. But we can give you a clue to the answer. The simplest job in our gas turbine program was development of the J-42 turbojet. That engine, as you know, was only an adaptation of an existing design. And yet more than a million man-hours were spent in preparing it for production. Development work was even more extensive on the powerful J-48 turbojet and T-34 turboprop engines. The time devoted to development on all three and several other gas turbine projects already has run into many, many millions of man-hours.

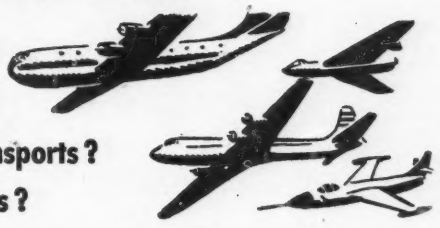
WHAT ARE THE RATINGS OF OUR MOST POWERFUL ENGINES?

Wasp Major	J-48 Turbojet	T-34 Turboprop
☐ 3,000 Hp.?	☐ 5,000 Lb. Thrust?	☐ 5,000 Hp.?
☐ 3,500 Hp.?	☐ 5,500 Lb. Thrust?	☐ 5,700 Hp.?
☐ 4,000 Hp.?	☐ 6,250 Lb. Thrust?	☐ 6,000 Hp.?

The Wasp Major, which went into production with a rating of 3,000 horespower, exceeds 4,000 horsepower in its latest version and is the most powerful piston engine in the world. The J-48, most powerful turbojet in this country, has a static thrust of 6,250 pounds, but its power is increased tremendously when afterburner and water injection are used. And you can be sure that, as development work continues on this power plant, its basic power rating will go much higher. The T-34, although it is in the early phase of its development cycle, is the most powerful turboprop now flying. It has officially passed its fifty-hour test at 5,700 horsepower, but Pratt & Whitney Aircraft confidently predicts its power will be increased by a very substantial margin.

WHAT TYPES OF PLANES USE THESE POWERFUL PRATT & WHITNEY ENGINES?

☐ Bombers?
☐ Fighters?
☐ Cargo Transports?
☐ Interceptors?



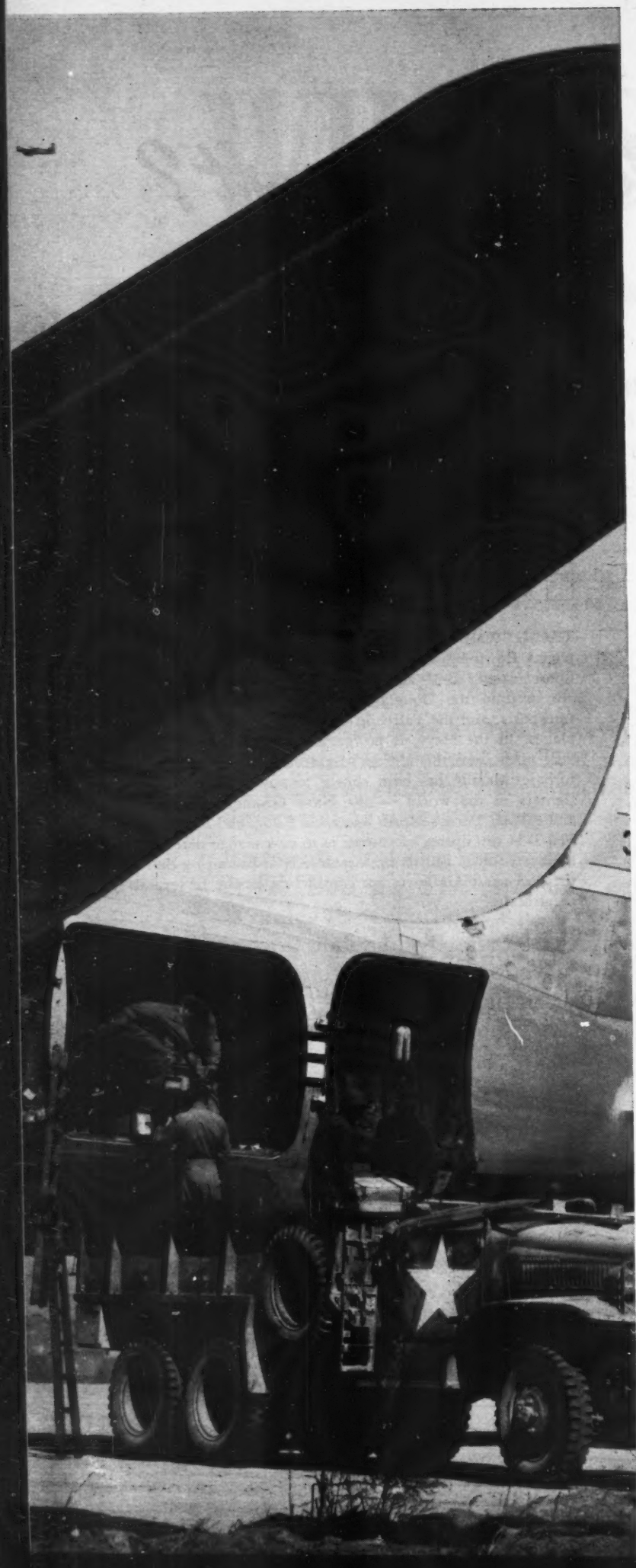
The big Wasp Major piston engines are used in many famous planes flown by the Navy and the Air Force. In addition to Consolidated's B-36 and Boeing's B-50 bombers, Wasp Majors are used in the Douglas C-124 and Boeing C-97 long-range transports, and the Fairchild C-119 and C-120 — all Air Force planes. In the Navy, it powers the Martin Mauler, carrier attack plane, and the Martin Mercator, patrol bomber. The J-48 turbojet already has been chosen to power three of the fastest fighters in the world — the Navy Grumman F9F-5 Panther, and the Air Force's North American F-93A and Lockheed F94-C. The T-34 turboprop, of course, is so new that to date it has only been test-flown. But its performance is so promising that already the Navy and Air Force are considering its use in several types of aircraft.

PRATT & WHITNEY AIRCRAFT
DEPENDABLE ENGINES

PRATT & WHITNEY AIRCRAFT

EAST HARTFORD, CONNECTICUT

ONE OF THE FOUR DIVISIONS OF UNITED AIRCRAFT CORPORATION



FOURTH in a SERIES

Airlifts have become so common and efficient that the most recent one almost went unnoticed

One morning last July, Maj. Gen. William Tunner, once boss of the Berlin Airlift, and more recently deputy commander of MATS, walked into his office at Andrews AFB in Maryland to get at a desk full of papers that had accumulated while he had been away on an inspection trip in Korea. But at the top of the heap was a set of orders, sending him to—Korea, *quickly* and *quietly*. The big offensive was being readied, and once again that unique American instrument the *airlift* was to be employed in providing a dependable, logistical flow to the front. It had worked in Berlin, it had worked in Exercise Swarmer, and it had worked from San Francisco to Tokyo. Indeed it was fast becoming SOP.

Hurriedly summoning a dozen of his most experienced staff men to accompany him, Tunner set off again for the Pacific. By the time he arrived in Tokyo Gen. Stratemeyer, FEAF Com-

(Continued on page 48)

At left, a C-54 of the 374th Troop Carrier Wing unloads at Kimpo. Specially trained cargo unloaders were rushed from Japan for the job. Above, a First Combat Cargo truck, loaded with supplies back home, rolls down a Packet ramp ready to rush its cargo to the front. Below, a jeep control "tower" brings in a steady stream of US transports.

NAVY

adds new logistic support!

Douglas DC-6 enters military service

To meet the need for increasing air lift, the U. S. Navy has ordered a fleet of R6D-1 aircraft.

This is the Navy's designation for the DC-6A *Liftmaster* which was developed from the world-famous Douglas DC-6 passenger transport.

On long missions this 320 mph airplane has double the cargo capacity of the R5D (C-54), yet it is one-third less costly to operate, takes one-fourth less manpower.

In the R6D-1, Douglas provides a ready answer to an urgent military need for a high-speed, long-range, *dependable* air transport.

DOUGLAS AIRCRAFT COMPANY, INC., SANTA MONICA, CALIFORNIA

DEPEND ON DOUGLAS

30TH ANNIVERSARY YEAR

NEW INSURANCE PLAN

PROTECTION

for your family

even while you are

on active duty

AFA ACCIDENT INSURANCE

LOW-COST PROTECTION FOR MILITARY AVIATION ACTIVITIES

plus **general accident insurance—including private and commercial flying**

HERE'S SECURITY AND PEACE OF MIND for you and your family, day and night, at home or away, on land, on sea, and in the air, any place in the world, even while you pilot — or are a passenger in — military aircraft, and even while you are on active duty with the Air Force.

AFA Accident Insurance requires no physical examination. It pays off for loss of sight or limb, as well as for accidental death, in certain categories. No other accident insurance offers you — at such small cost — comparable military and civilian *air and ground protection.* Available in units of $1,000 — up to a maximum of $10,000 — AFA Accident Insurance is exclusively for members or associates of the Air Force Association. Annual premiums per $1,000 of insurance range from $3 to $15. See chart on opposite page for complete details.

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CLASSES A-1 and A-2

Designed especially for pilots and other flight crew members of the REGULAR military services, who are engaged in military flying activities as a full-time occupation. A-1 covers accidental death and loss of sight or limb from any cause, including military or civilian accidents, on land or sea or in the air, world wide. A-2 offers the same accidental death coverage as A-1 but does not cover loss of sight or limb.

CLASSES B-1 and B-2

Designed especially for pilots and other flight crew members in the RESERVE military services, whose flying activities are part-time (generally limited to weekends and the two-week annual military service period). B-1 covers all types of accidental death, whereas B-2 is limited to death from aviation accidents only. B-1 also has broader loss of sight and limb benefits than B-2 (see chart).

CLASS C

Designed for all persons who are not flying personnel and whose participation in aviation is limited to traveling in aircraft as passengers or to working in or around aircraft on the ground. Death or injury from every type of non-aviation accident, and from certain types of aviation accidents, is covered (see chart).

THIS CHART SHOWS EXACTLY WHAT YOU GET . . .
and what it costs!

Available with premiums payable annually, semi-annually, or quarterly

CLASS OF POLICY	PERSONS ELIGIBLE: All AFA members and associates (other than paratroopers and airborne infantry) except as follows:	SCOPE OF POLICY COVERAGE (indicated by √)						ANNUAL PREMIUM PER $1,000
		Death Benefits			Loss of Sight or Limb Benefits			
		Military Aviation Accident	Civil Aviation Accident	All Other Accidents	Military Aviation Accident	Civil Aviation Accident	All Other Accidents	
A-1	No exceptions	√	√	√	√	√	√	$15.00
A-2	No exceptions	√	√	√				13.80
B-1	Flight-rated REGULAR military personnel not eligible (see note 1)	√ (see note 2)	√ (see note 2)	√		√ (see note 2)	√	7.20
B-2	Flight-rated REGULAR military personnel not eligible (see note 1)	√ (see note 2)	√ (see note 2)			√ (see note 2)		4.80
C	FLIGHT-RATED Regular and Reserve military personnel not eligible (see note 1)	√ (see note 3)	√ (see note 3)	√	√	√	√	3.00

NOTE 1: "Flight-rated personnel" means pilots, co-pilots, navigators, flight engineers, radio operators, bombardiers, aerial gunners, and similar flying personnel of the military services or their reserve components.

NOTE 2: Class B-1 and Class B-2 policies expire with respect to aviation accident coverage if the insured person serves 120 days, consecutively or non-consecutively, on active military duty during the policy period; but Class B-1 coverage continues in effect thereafter for other types of accidents.

NOTE 3: Class C coverage does not apply to accidental death of the insured person on an aircraft unless he is on such aircraft as a passenger or in the course of his employment as ground crew or administrative personnel.

Says GEN. JIMMY DOOLITTLE:
"If You Fly You Need AFA Accident Insurance."

THOSE OF US who fly military aircraft, as pilots or passengers, on daily missions or week-end assignments, know better than anyone the risks involved.

We accept those risks. It is quite another thing for us to ask those who are dependent upon us to accept them.

Airmen can live by the numbers, by a philosophy that says, come what may, we'll pull through the tightest spin and the roughest weather—until our number is up.

We cannot forget that our number hangs heavy over the heads of our dependents — our wives, children and parents, as the case may be. We have an obligation to give them the protection they deserve.

Accident insurance is a logical form of protection against the risks of military aviation. Group accident insurance makes possible maximum protection at minimum cost. It is natural that those of us who have grouped together in Air Force Association should take advantage of these benefits.

If you fly you need AFA Accident Insurance.

JAMES H. DOOLITTLE
Lt. Gen., USAFR

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Please send complete information about AFA Accident Insurance together with schedule of optional means of payment and application blank.

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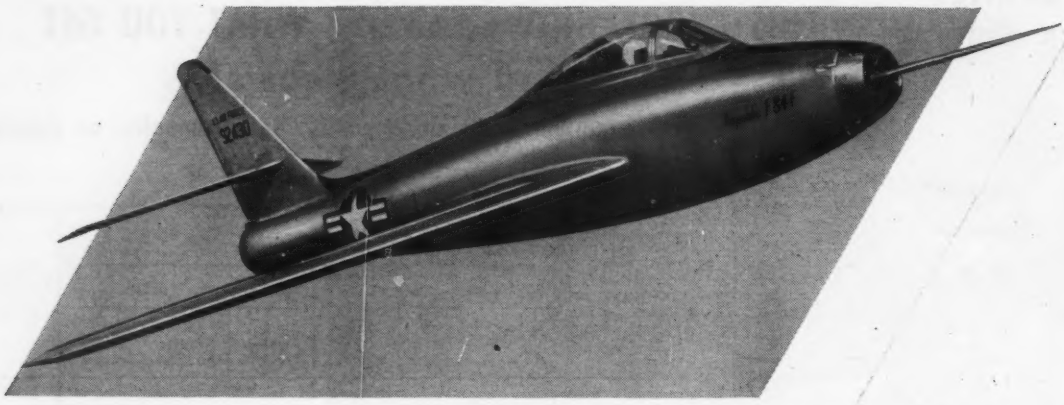
Address.....

City.....**Zone**.....**State**.....

VERSATILITY! THE SWEPT-BACK F84F



VERSATILITY *in speed, range, altitude and firepower, going higher, farther and faster, with more armament*

VERSATILITY *in performing any required combat mission to contact the enemy successfully and conquer him*

VERSATILITY *in design and production capabilities . . delivering operational aircraft faster and at lower cost*

REPUBLIC AVIATION

FARMINGDALE • LONG ISLAND • NEW YORK *Makers of the Mighty Thunderbolt • Thunderjet • XF-91 •* F84F

AIRPOWER IN THE NEWS

VOL. 33, NO. 11 WASHINGTON, D. C. NOVEMBER, 1950

99,999 OUT OF EVERY 100,000 PASSENGERS travelling the U. S. scheduled domestic and international airlines during the four years 1946-1949 were carried safely, recent Flight Safety Foundation, Inc., estimates revealed. It was estimated that 23 per cent of all passenger fatalities in those four years resulted from passenger's inability to escape the fire which followed impact. Another thirteen per cent were lost as a result of fire in flight. Both the fire in flight and fire following impact problems are being subjected to far-reaching intense research by the CAA, NACA and other agencies.

INDUSTRY EMPLOYMENT CONTINUES TO INCREASE. Current employment at Convair's Fort Worth Division has passed the 20,000 mark -- highest since end of WW II. (Peak wartime employment at the plant was over 30,000.) Boeing's Seattle area plants has passed the 20,000 mark, with an increase of more than 2,000 since start of Korean war. Employment at Boeing's Wichita Division has increased 1,600 bringing the total to approximately 11,700 employes. Reserve plants are not needed in current expansion program.

AIR NATIONAL GUARD WILL BE REORGANIZED in the near future on the basis of Regular Air Force's "wing-base" organizational structure. The change in organization is designed to increase flexibility and state of readiness of ANG units and provide for their ready integration into USAF. Under present organization there are 12 ANG wings, 27 tactical groups and 84 tactical squadrons. These units will be reorganized into 27 combat wings, each with a single combat group. There will be 84 combat squadrons in these groups.

AIR FORCE STARTS RECRUITING DRIVE TO BUILD UP ITS RESERVE FORCES. Most critically needed, both for the Regular and Reserve forces, are those qualified in technical specialties. Veterans including WAFS who are qualified may be enlisted in AF Reserve in grade held at time of separation from Regular establishment or a Reserve component, whichever is higher.

PROVISIONS FOR RETURNING TO FLYING STATUS some of the 1800 AF rated officers who were removed from flying duties under the economy measures of last fiscal year were announced recently by Gen. Vandenberg. The criteria under which all rated officers will be returned to flying status follows: a. Officers must be qualified and volunteer for return to flying status. b. They must be potentially qualified to perform combat duty. c. Their return will further accomplishment of the command's flying mission.

LT. GEN. NATHAN F. TWINING has been named AF Vice Chief of Staff by President Truman. Lt. Gen. Lauris Norstad has succeeded Lt. Gen. John K. Cannon as Commander-in-Chief of USAF in Europe. The President also appointed Lt. Gen. Idwal H. Edwards as Deputy Chief of Staff, Operations. Frank T. McCoy, Jr., of Nashville, Tennessee, has been appointed as Deputy for Civilian Components to Harold C. Stuart, Asst. Sec'y of AF.

ESTABLISHMENT OF "U. S. NORTHEAST COMMAND" under U. S. Joint Chiefs of Staff was announced last month by Dept. of Defense. Maj. Gen. Lyman P. Whitten, USAF, has been designated Commander-in-Chief of this command with headquarters at Pepperrell AF Base, Newfoundland. . . Greenville AF Base, South Carolina, will be reactivated in near future by USAF. . . AF plans to use on a "lease-basis" some facilities at Alexandria Municipal Airport, Alexandria, Louisiana. . . Gunter AF Base, Alabama, will augment a portion of USAF School of Aviation Medicine which was formerly based at Randolph AF Base, Texas.

AIRPOWER IN THE NEWS CONTINUED

AN EXPERIMENTAL PARACHUTE JUMP from an altitude of more than eight miles has been made by an AF captain. The 42,449-foot jump, which was made by Capt. Richard V. Wheeler of Watertown, Mass., exceeds the highest previous bailout recorded by AF by more than 2,000 feet.

A NEW POSITION OF DEPUTY INSPECTOR GENERAL designed to increase the effectiveness of USAF flying safety program by emphasizing the technical inspection of all types of USAF aircraft has been established by USAF with Maj. Gen. Victor E. Bertrandias as head of the new office.

A TOTAL OF 447 DECORATIONS has been made to airmen and officers of the U. S. Far East Air Forces against the North Koreans as of late August. . . A cutback in contracts with civilian commercial airlines currently carrying personnel and cargo to Japan on the Pacific airlift has been announced by MATS Chief Gen. Lawrence Kuter. Cutbacks were made possible by increasing usage of military transport planes and crews on the flights.

RESERVE AND NATIONAL GUARD AIRMEN RECALLED TO EAD will rank from date of recall preceded by a period of time equal to all previous active AF and Army service in an equal or higher grade, USAF announced last month.

AN ARMED FORCES RESERVE MEDAL to awarded to reservists for 10 years of honorable service during any 12-consecutive years, has been authorized by President Truman.

A 3,300-MILE NON-STOP, THRICE-REFUELED FLIGHT in a Republic F-84E Thunderjet from Manston, England, to Limestone AF Base, Maine, was completed in mid-September by Col. Dave Schilling.

AIR ROTC ENROLLMENT HAS BEEN INCREASED by USAF to expand and accelerate commissioning of officers. Quota for college juniors to enter two-year advanced AF ROTC technical courses has been increased by 3,000 and provision has been made to train 1,500 college seniors in a one-year advanced program on aircraft maintenance engineering, air installations, communications and armament, American Aviation has reported. . . Frank Grimes Jones, of Cincinnati, Ohio, has been awarded the first Paul T. Johns Memorial Award as an outstanding member of the Arnold Air Society at the University of Cincinnati. Mr. Jones was named winner of the award for his loyalty and devotion to this AF ROTC society and for his outstanding record as an air ROTC cadet.

AN ADDITIONAL UNDISCLOSED NUMBER OF T-29 "FLYING CLASSROOMS" for training navigators and bombardiers has been ordered by USAF from Convair. The T-29 is the first plane designed specifically for training navigators in groups. . . First of the new type KB-29P Flying Boom aerial tanker airplanes has just been delivered to the 97th Aerial Refueling Squadron at Biggs AF Base, Texas. . . SAC receives first of three VC-97D Stratofreighters. The special 82-ton "Command Transport", capable of a top speed of 375 mph, will be assigned to headquarter units of SAC for fast, long range transportation of key staff personnel accompanying overseas missions.

D. W. RENTZEL, CAA, winner of one of AFA's 1950 top aviation awards, has been named by Pres. Truman to fill the unexpired term of Joseph J. O'Connell, Jr., former chairman of CAB. . . AFA Regional Vice President Ray Ireland, vice-president, traffic administration, of United Air Lines, has been appointed chairman of the committee for air transportation, Chicago Civil Defense Committee.

Systems Engineering

Guided missiles experience aids Martin in implementing this airplane design concept

Guided missiles were the first aircraft to attain supersonic speeds—the first to acquire fully automatic control—and the first to require the close design integration of components which The Glenn L. Martin Company calls *Systems Engineering*. Today, with piloted airplanes also passing the sonic barrier and being assigned increasingly difficult missions, it is essential that they, too, be designed as integrated air-borne systems, not merely as flying vehicles whose sole goal is speed.

With a background of demonstrated accomplishments on top level missiles projects, and continuous growth in this field . . . The Glenn L. Martin Company has carried over *Systems Engineeing* from its missiles experience to its airplane designing. The Martin engineering staff has been shaped and manned to provide proper emphasis on all three of the basic types of functional elements involved in the production of a modern airplane —airframe and power plant—electronic flight and navigational controls—and military armament or passenger facilities.

Martin Systems Engineering recognizes that the immediate problem of aeronautical engineering is not to concentrate exclusively on airframe performance, but to integrate the necessary electronic and mechanical systems into the airframe design to produce a truly effective military weapon. And, whether the weapon is a manned airplane or a guided missile, it is imperative that the complete development be so scheduled that the end product represents a completely coordinated system. There is no advantage in having an airframe ready for flight testing while the guidance system, which may necessitate airframe changes, is still a gleam in the designer's eye.

That is Martin *Systems Engineering*. That is why radar, servo-mechanism, automatic control, automatic computer and antenna experts—as well as aerodynamicists, structural engineers and electrical, hydraulic, armament and power plant installation specialists—are all part of the well-integrated engineering team The Glenn L. Martin Company offers its customers today.

Martin Ads Tell Air Power Story

Reaching millions of informed, alert American magazine readers, Martin advertisements like this one highlight air power's important role in our country's preparedness program. And survey after survey has demonstrated that their fiction-style appearance attracts an extremely high readership.

The general public and business circles are reached through the pages of *Time*, *Newsweek* and *Business Week*. The men and women who write and edit the news are kept abreast of latest developments through *Editor & Publisher*, *American Press* and *Publisher's Auxiliary*.

BLASTING BEAUTY!

Sleek, high-speed, powerful— the Martin XB-51 is the Air Force's first postwar plane specifically designed for supporting our ground forces.

Blasting enemy supply lines and installations to help keep our ground forces rolling—that's one of the roles the new Martin XB-51 is designed to play in America's preparedness program! It's a teamwork bomber—versatile, powerful, super-fast, highly maneuverable, designed to be capable of operating from combat area fields. Its lines are clean and graceful, yet radically different. A unique power plant arrangement includes two jets mounted on fuselage pylons and a third in the tail. Drastically sweptback wings, a T-shaped tail and tandem landing gear—plus many other features still classified under military security regulations—make it as modern as tomorrow!

Like all Martin developments, the XB-51 is the product of a highly skilled engineering team. Electronic, aerodynamic, metallurgy research, servo-mechanism studies—all play their parts in the technical leadership Martin offers its customers today. All play their parts as Martin extends research frontiers in advanced design aircraft, rocketry, jet propulsion, supersonic missiles and other far-reaching fields! THE GLENN L. MARTIN COMPANY, Baltimore 3, Maryland.

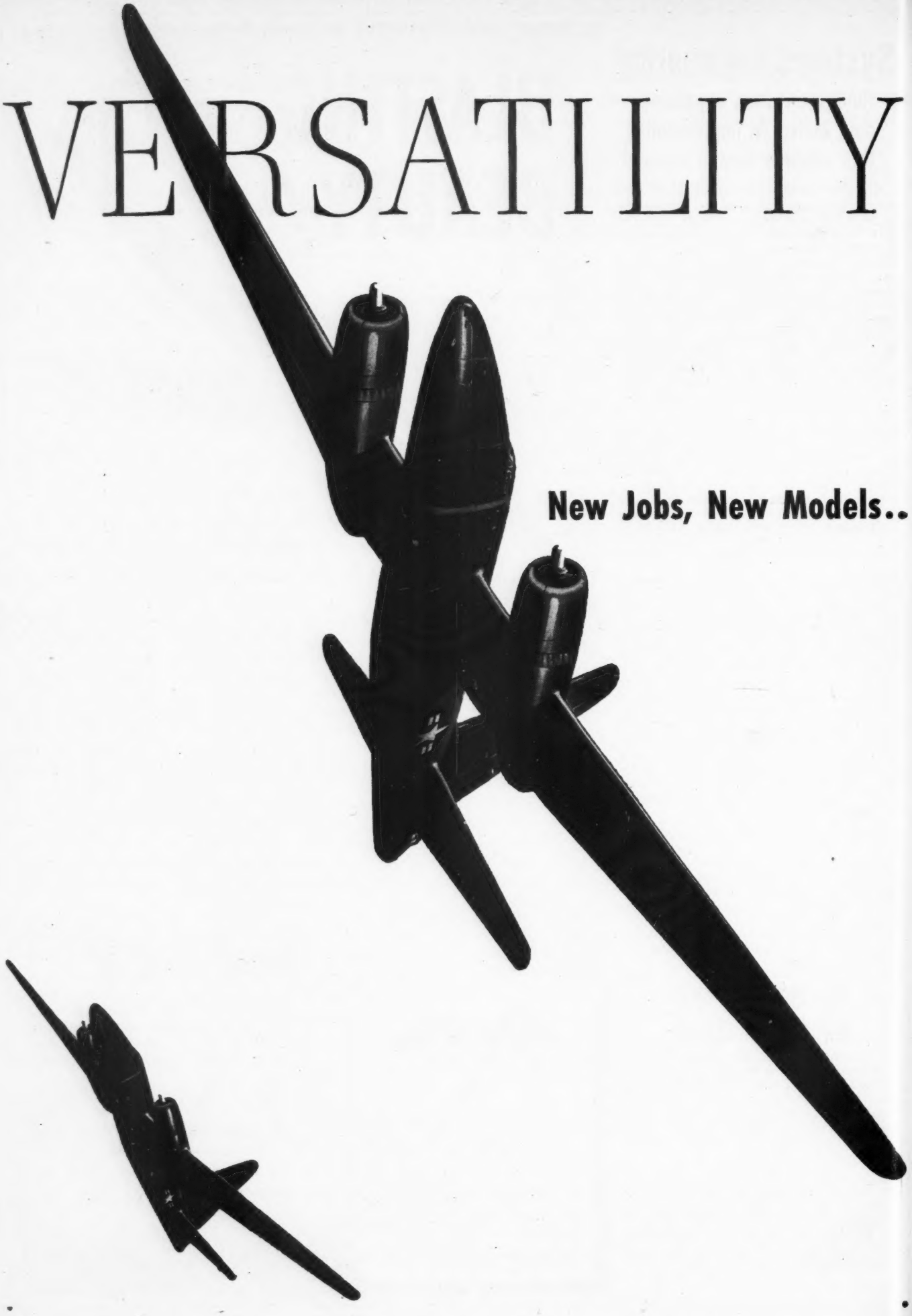
Powered for faster starts, the Martin XB-51 is designed to have great versatility for operations to and from smaller combat area fields. For landings, the new Martin bomber has a parachute stowed aft which may be released

at the pilot's discretion for more rapid deceleration.

Martin
AIRCRAFT
Builders of Dependable Aircraft Since 1909

Manufacturers of: Military aircraft • Martin airliners • Guided missiles • Rockets • Electronic fire control and radar systems • Precision testing instruments **Developers and Licensors of:** Mareng fuel tanks (to U. S. Rubber Co.) • Marform metal-forming (to Hydropress, Inc.) • Honeycomb construction material (to U. S. Plywood Corp. and Aircraft Die Cutters) • Structural adhesives (to U. S. Plywood Corp. and Bloomingdale Rubber Co.) • Permanent fabric flameproofing (to E. I. duPont de Nemours & Co.) • Hydraulic automotive and aircraft brake **Leaders in** Building Air Power to Guard the Peace, Air Transport to Serve It.

VERSATILITY



New Jobs, New Models..

..The Navy's P2V

Like other Lockheed aircraft, the Navy's powerful P2V Patrol Bomber, the Neptune, is today far more versatile than its original prototype. The physical changes that this plane has undergone are so advanced they are secret, but the proved achievement of the P2V series is a matter of record.

The P2V holds the world's longest *non-refueling, non-stop* flight record of 11,236 miles—from Perth, Australia, to Columbus, Ohio.

It is the largest airplane to take off from an aircraft carrier.

A squadron of Navy P2V's flew 691 hours photographing the Arctic in an unprecedented aerial survey. They took more than 120,000 separate pictures.

P2V's in the Arctic have operated successfully in extremely adverse cold weather, as cold as −42°F.

Neptunes are currently engaged in vital operations in the Pacific area.

Long in quantity production, the Neptune provides the Navy with a patrol bomber designed for many jobs: anti-submarine warfare, all-weather reconnaissance, including hurricane patrol, long-range photo reconnaissance, air search and rescue, special carrier-launched missions.

Lockheed
Aircraft Corp.

Burbank, California

TECH TALK By Douglas J. Ingells

Air Materiel Command has taken delivery of the world's largest and most powerful aircraft propeller. Manufactured by the Curtiss Wright Corp., the eight-bladed giant is over 19 feet in diameter and is designed for use with a gas turbine engine of 10,- to 15,000 horsepower. The two rows of four blades each whirling in opposite directions on a specially geared shaft have a rated thrust far in excess of that required to lift a DC-6 off the ground with a maximum load.

Wingless Wonder III, a B-26 with 15 feet of each wing removed, is the latest Air Force instrument for testing tires and landing gears loaded as heavily as possible. The B-26, which can withstand a wheel loading of about 15,000 pounds on each tire and brake to a full skid at a speed of 150 miles an hour, outdoes its predecessor, Wingless Wonder II, an A-20 with a maximum wheel loading 9,000 pounds on each tire.

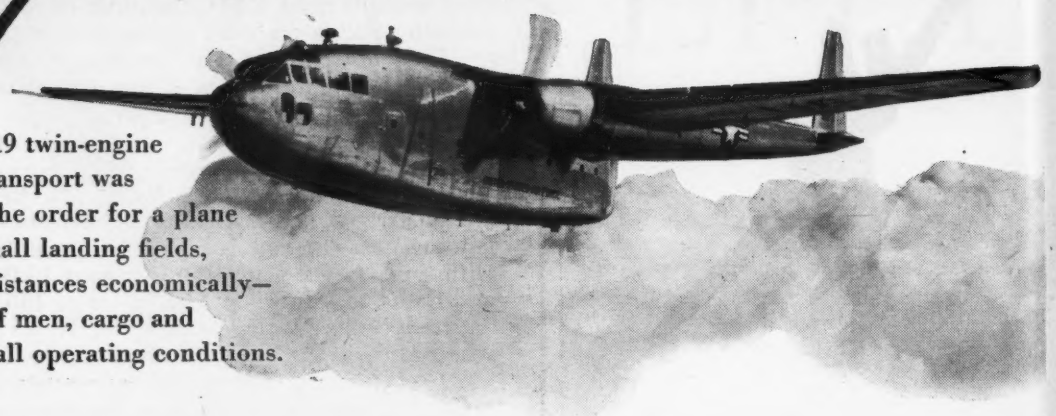
Greatest stumbling block in development of highspeed planes is the human body whose basic design has not changed perceptibly in thousands of years. Present day interceptors flying towards each other at 600 MPH, diminish the distance between them at the rate of one mile in three seconds. By the time a pilot recognizes the enemy, he can't react quickly enough to fire his guns before the planes have passed each other. The interception operation of the future, therefore, will be done automatically by electronic brains which will require the pilot only to push buttons. Though we are still a considerable distance from the automatic dogfight, Dr. N. E. Edelfsen, associate technical director of the Aerophysics Laboratory of North American Aviatoin said, "We are at the threshold of a new era in automatic control."

One of the world's most tractable tractors—a wieldly wonder that can haul 14 times its own weight in airplanes—has been developed for handling the huge B-36. No midget itself at 29,000 pounds, it can pull aircraft weighing as much as 400,000 pounds, can go forward, backward or sideways, and make a complete turn in an area of less than 17 feet. The A-2, as it is called, has been equipped with an Allison hydraulic torque convertor transmission to insure smooth drawing power and eliminate the possibility of landing gear damage due to sudden jerks. For operation on snow or ice, traction for the wheels is provided by sand dispersers attached to the tire fronts.

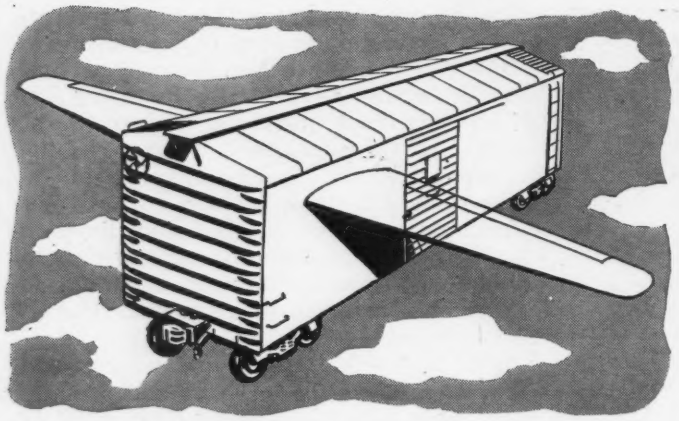
When it's chow time at 30,000 feet two days after takeoff, the Air Force's new precooked meals can be quickly heated in aircraft kitchens which contain everything except the sink. The Quartermaster Food and Container Institute and the AMC Aero-Medical Laboratory have not only come up with tasty meals of boned chicken and pork and applesauce, but with compact light stoves of the utmost efficiency. The B-3 oven, ideally suited to combat conditions, can heat eight cans of rations in 11 minutes. Heat is regulated by a series of thermostats which see that the food temperature never exceeds 212 degrees, thus eliminating the danger of exploding cans. B-29s and B-50s will be equipped with two of these lightweight ovens which weigh only eight and one-half pounds each.

First aid for chilly fighter planes is on the way with the development of an air transportable shelter to be used on hangarless forward strips. Designed to withstand a wind velocity of 70 miles per hour and a snow load of 30 pounds per square foot, this aircraft maintenance shelter has no internal supports or obstructions, is insulated against cold, and is roomy enough to hold the largest Air Force or Navy fighter planes in use today.

Engineered TO ORDER!

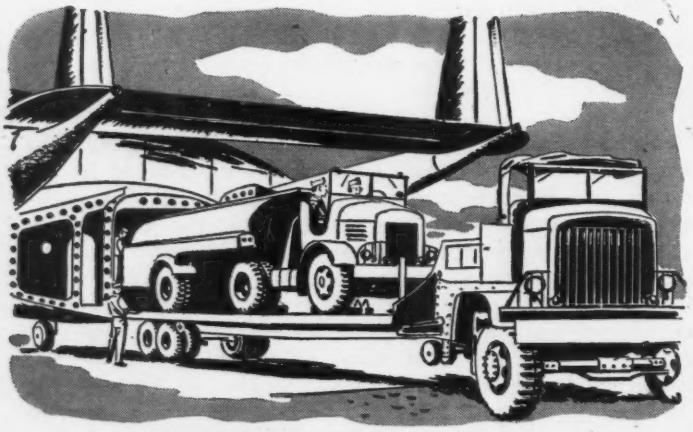


The Fairchild C-119 twin-engine cargo and troop transport was *engineered* to fill the order for a plane that can utilize small landing fields, fly long or short distances economically—carry huge loads of men, cargo and equipment under all operating conditions.

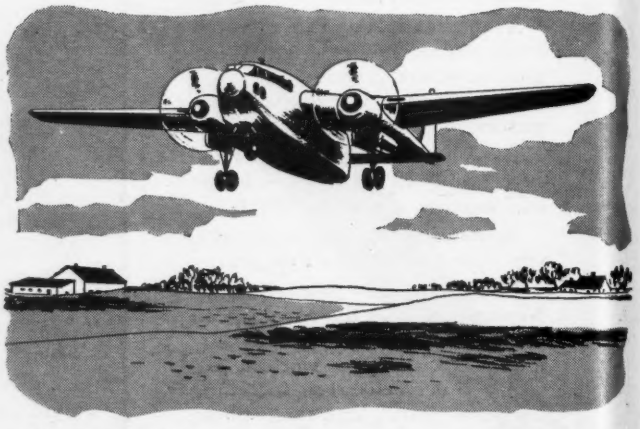


THE BOX-CAR PRINCIPLE in which maximum space is utilized was incorporated as the basis of the overall C-119 design. No tapered or circular design to lose valuable extra storage space.

REAR LOADING at truck bed height is easily accomplished by the rear center split compartment—the halves hinging outwards to allow direct loading of freight and equipment.



VERSATILE, the C-119 can be equipped either as a troop transport, litter carrier or heavy cargo aircraft. Paratroopers and equipment are easily dropped from the rear doors.



LONG- OR SHORT-DISTANCE HAULS covering a variety of military cargo ranging from "K" rations to six-ton trucks make the Packet the Air Force's most efficient transport plane.

ENGINE AND AIRPLANE CORPORATION

FAIRCHILD *Aircraft Division*

HAGERSTOWN, MARYLAND

Other Divisions: Fairchild-NEPA Division, Oak Ridge, Tenn. • Fairchild Engine Division, Guided Missiles Division, Al-Fin Division and Stratos Corporation, Farmingdale, N. Y.

AIR FORCE
NOVEMBER, 1950

"We are not helpless"

Here are the simple facts about an atomic explosion. It is the duty of every American citizen to learn them well, for ignorance and fear could take more lives than the bomb itself. Here is where intelligent defense *begins.*

During the five years since the first atomic bomb was exploded over Hiroshima, a frightened world has been led to believe by some of the more articulate atomic scientists that "there is no defense against the atomic bomb" and that "none will ever be devised."

As long as we were the sole possessors of the atomic bomb, with the further assurance that it would take Russia several years to make one, this dictum served largely to generate a sense of security.

The announcement that Russia had tested her first atom bomb at least three years ahead of time, followed within a few months by the Communist attack on South Korea, has changed the picture to the point where many of our people are in danger of succumbing to a sense of helplessness against a potential atomic attack.

Strangely enough, a great proportion of this despair comes not from the true *facts* of the bomb's capabilities, but from *ignorance* of those facts—ignorance perhaps born of two things—a.) security which has surrounded atomic weapon development, and b.) a public disinclination to absorb what meager information *has* been available.

The recent publication by the Defense Department and the Atomic Energy Commission of the volume "The Effects of Atomic Weapons" must be regarded, therefore, as a milestone in the preparation of atomic defense (both psychological and material) for here at last are all the facts regarding the bomb's destructive capacity from blast, from heat and from radiation—unclassified and undramatized. Here at last is a volume that gives every citizen not only the opportunity but the responsibility of clearing his mind once and for all of the destructive enigmas that are the spawning places for hysteria and fear—agents capable of far greater damage to life, property and spiritual values than all the A-bombs the Russians could build.

Unfortunately, the volume has been prepared as "a source of scientific information for technical personnel engaged in civil defense," and as such is not for the average layman. This article, therefore, will present the essential data on what the bomb is and what it can do in non-technical language, the better to prepare a defense against it, for this is surely where defense begins.

WE ARE NOT HELPLESS

But to Defend Ourselves Against Atomic Attack We Must First Learn What The Bomb Is and What It Can Do

By way of introduction let it be said that there is nothing about atomic energy and atomic weapons that is beyond the grasp of the average layman. But to understand the fundamental principle underlying the atomic bomb, including also the hydrogen bomb, one must have a general concept of the relationship that exists between what we know as matter and energy, the two aspects in which the material universe manifests itself to our senses.

In his famous relativity theory Albert Einstein demonstrated that matter and energy were two different manifestations of one cosmic entity, that matter was energy in the frozen state, while, conversely, energy was matter in the fluid state, the two states being interchangeable. In his famous mathematical formula he revealed that one gram of matter represented in the frozen state the enormous total of 25,000,000 kilowatt-hours of energy.

From this we learned that whenever energy in any form was liberated, such as, for example, by the burning of coal or oil, only a small amount of matter was lost, so small in fact, that it was not possible to weigh it by any method known to us. We have to burn 3,000 to 7,000 tons of coal to convert the matter of one gram into energy, a ratio of three to seven billion to one.

When energy is obtained by the burning of coal, the atoms of the coal, mostly carbon and hydrogen, remain unchanged, the loss of matter being due to a rearrangement of the electrons on the outside surface of the atom.

In what is known as atomic energy, the energy is obtained by a break up of the atoms used as fuel. When this happens, an amount of matter three to seven million times as great as in the burning of coal is converted into energy. As compared with the amount of matter converted into energy in the explosion of TNT the ratio is 20,000,000 to one. In other words, the explosion of one kilogram (2.2 lbs.) of fissionable material, such as Uranium 235 or plutonium, releases an energy equivalent to 20,000 tons of TNT.

There is nothing particularly difficult about nuclear fission. It can be thought of generally in terms of the familiar large rock, being reduced to small rocks by the prisoner of song and fable. Suppose this unhappy fellow strikes the large rock a heavy blow, and breaks it into two or three chunks plus several bits, or chips. The large rock corresponds to a uranium atom, the chunks "fission fragments," and the chips to neutrons. The important point is that when the atom breaks apart, a large amount of energy is released; and furthermore, under the right conditions, the neutrons from one fission would strike neighboring atoms and break them apart. It would be as though the striking of one large rock in the prisoner's pile would cause all the others to break apart. If enough neutrons are produced each time an atom breaks apart, they can in turn split other atoms and so start what is called a chain reaction. If, for example, two neutrons are released at each fission, they could bombard and split two more atoms; and if this continued, the total number of atoms which had broken up would increase steadily: 1, 2, 4, 8, 16, 32, 64, etc. In about 80 cycles, all the atoms in one kilogram of uranium could theoretically be caused to fission. Since these 80 cycles take place in about one millionth of a second, the release of the enormous amount of energy in such a short time obviously, provides the conditions for a tremendous explosion. (It takes about one fiftieth of a second to blink your eye; so if they were timed right, twenty thousand A-bombs could be exploded in sequence while you blink once.) The process described above is a perfect one, and if it could be done, a bomb could be made from one kilogram of uranium or plutonium; but since the actual process is less than 100 per cent efficient, a larger amount is used in an actual bomb.

Suppose now that a bomb is exploded in the air at an altitude of about 2,000 feet, and is so constituted that it releases about the amount of energy mentioned above, equivalent to 20,000 tons of TNT. The energy release occurs in an extremely short time, so initially it is contained in the original dimensions of the bomb. The resulting high energy density causes the fission products to be raised to a temperature of more than

a million degrees Centigrade. Because of the restricted space, the pressure at the instant of explosion is extremely great—hundreds of thousands of times as great as the pressure of the atmosphere.

These extremely high temperatures cause energy to be radiated as heat rays, or thermal radiations. As the surrounding air absorbs this radiation, it becomes heated to incandescence, and the exploded bomb begins to appear, after a few millionths of a second, as a luminous sphere called the "Ball of Fire." As the energy is radiated into a greater region, raising the temperature of the air through which it passes, the ball of fire increases in size, but the temperature, pressure, and brightness decrease correspondingly. After about one hundred millionths of a second, the ball of fire is about 90 feet across, has a temperature of about 300,000 degrees Centigrade, and from a distance of six miles appears one hundred times as bright as the sun.

The ball of fire continues to expand, and a shock wave (pressure wave) develops and advances on a spherical wave front surrounding the ball of fire. In about one second, the ball of fire has attained its maximum diameter of about 900 feet, and the shock wave is about 600 feet further away. In ten seconds, the ball of fire has risen about 1500 feet and the shock wave is 12,000 feet away, having passed the region of maximum damage. As the ball of fire rises, it cools rapidly and the constituents condense into water droplets and smoke particles, which make up the atomic cloud. The cloud continues to rise; its maximum altitude being determined by weather conditions. Under average conditions, the cloud would reach 30,000 feet in about eight minutes, and would still be rising at about 12 miles an hour.

A different appearance, as might be expected, occurs when a bomb is detonated under water, and the details vary with the depth, area of water, and distance below the surface at which detonation takes place. The ball of fire forms as in an air burst, but is very quickly cooled and loses its luminosity. The expanding gas bubble initiates a shock wave in the water, which travels outward from the explosion as a rapidly advancing ring. As the blast wave reaches the surface, a mound or column of water and spray is thrown up directly over the point of burst. This water column is heavily radioactive, and represents a hazard when the bomb is exploded in a harbor upwind from a city. But it should be noted that because of its "smothering" effect an underwater explosion is not considered to be nearly so profitable a way to employ the bomb as exploding it in the air. There are cases, of course, where the radioactive spray from a water burst would be more devastating than the blast and thermal radiation from an air burst. But these are exceptions, and the burden of this article, therefore, will deal with the air burst.

So much for the details of physiognomy. So much for the cause. Now let's look at the effect...

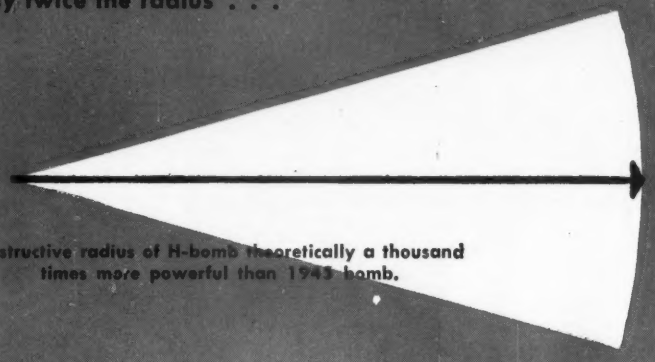
Super-Weapon Scaling Laws

Contrary to popular notion, a bomb twice as powerful as the 1945 model will NOT do twice the damage. As illustrated here. . . .

Destructive radius of 1945 model A-bomb.

Destructive radius of a bomb *8 times* as powerful.

. . . the blast effect increases with the *cube root* of the power, so that a bomb *eight times* the power of the 1945 bomb (one equal to 160,000 tons of TNT) would produce blast damage and casualties over an area of only twice the radius . . .



Destructive radius of H-bomb theoretically a thousand times more powerful than 1945 bomb.

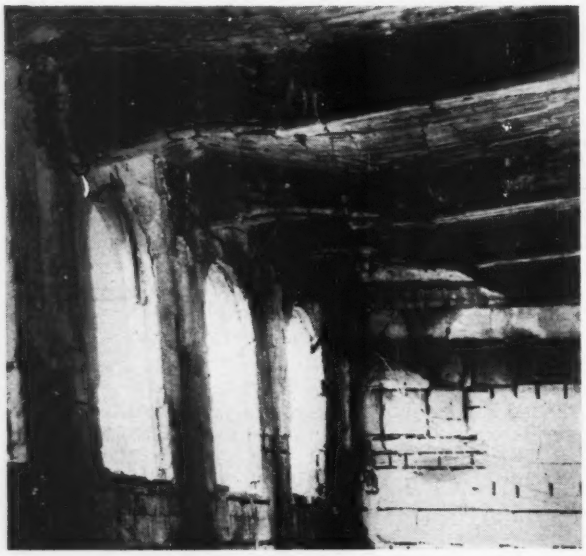
. . . even the Hydrogen bomb, which may reach an explosive power as high as 20,000,000 tons of TNT (a thousand times more powerful than the 1945 bomb) would produce blast damage and casualties over a radius only ten times greater.

Destructive radius of 1945 model A-bomb.

Destructive radius of a bomb *4 times* as powerful.

And when it comes to the incendiary effect, the increase in the radius of destructiveness goes by the *square root* of the power, so that you would need to increase the power of a bomb four times to produce incendiary effect over a radius twice as great as the affected area of a 1945 bomb.

TYPICAL A-BOMB DAMAGE FROM BLAST . . .



. . . FROM THERMAL RADIATION (BURNS) . . .

. . . AND FROM NUCLEAR RADIATION.

Remember this

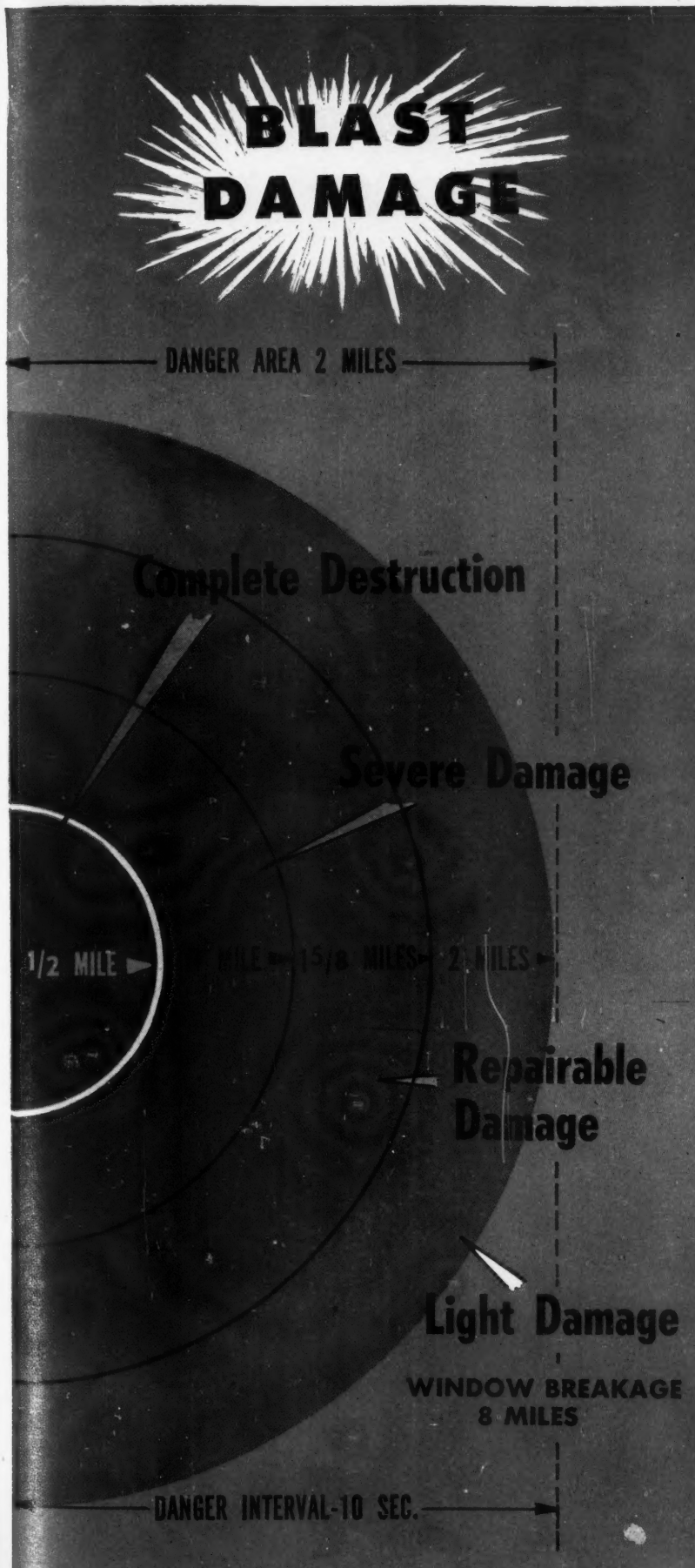
All damage resulting from an atomic explosion is caused by one of three things:

1. BLAST—the same as in an ordinary TNT bomb, only far greater.

2. THERMAL RADIATION—which is nothing more than heat, identical to that from a furnace.

3. NUCLEAR RADIATION—which consists for the most part of gamma rays quite similar to X-rays.

Each of these properties is a killer in its own right. In effect the A-bomb is three weapons in one, and each of the three must be examined independently, therefore, to be understood. On the next three pages we have undertaken to make just such an examination. At the end, however, the three must be put back together into one weapon. For they will never strike independently, and safeguards against a single aspect might only invite disaster from another.



It Would Be Responsible For 50 to 60 Percent of Deaths

Blast damage is caused by the extremely high intensity shock wave which travels outward from the detonation. The essential characteristics of this wave are an abrupt rise in pressure, followed by a gradually decreasing pressure, lasting for about a second, and then a suction phase, which lasts for several seconds. Associated with the pressure wave is an intense wind which blows *away* from the explosion initially and then reverses direction at the start of the suction phase and blows *toward* the explosion for a longer time but with less velocity.

The ability of a building to withstand the shock depends, of course, on its strength, to a lesser degree on its shape, and upon the number of openings through the building which can serve to relieve the pressure on the outside walls. The strongest structures are heavily framed steel and reinforced concrete buildings, while the weakest are probably commercial shed-type structures having light frames and long spans of unsupported beams. Well-built frame residential structures show surprising resistance to blast damage, although houses with load-bearing brick walls are vulnerable.

A detailed analysis of the damage to structures by the bombs exploded in Japan has led to the formulation of general rules for estimation of the damage which would occur from an airburst bomb of about 20 KT (20,000 tons of TNT equivalent):

a. *Virtually Complete Destruction* will occur out to a radius of approximately one-half mile from ground zero (a point on the ground directly under point of detonation).

b. *Severe Damage*, or major structural damage that would result in collapse or liability to collapse of the building, will occur out to a radius slightly greater than one mile.

c. *Moderate Damage*, short of major structural damage but sufficient to render the structure unusable until repaired, will occur out to radial distance of about one and five-eighths miles.

d. *Partial Damage*, something worse than plaster damage and window breakage, will be inflicted out to a radius of 2 miles.

e. *Light Damage*, mostly plaster and window breakage, may occur as far as 8 miles or more.

(Continued on page 47)

Heat Flash Takes 20 to 30 Percent of A-Attack Lives

Thermal radiation is the technically accurate term for what is commonly known as heat rays. Thermal radiation is the principle by which electric heaters work. More complicated home heating systems, in which hot water circulating through pipes buried in the floor heat the air above, also utilize thermal radiation, although the system is popularly known as "radiant heating." The rate of energy transfer is proportional in a complicated way (to the fourth power) to the temperature of the heat source.

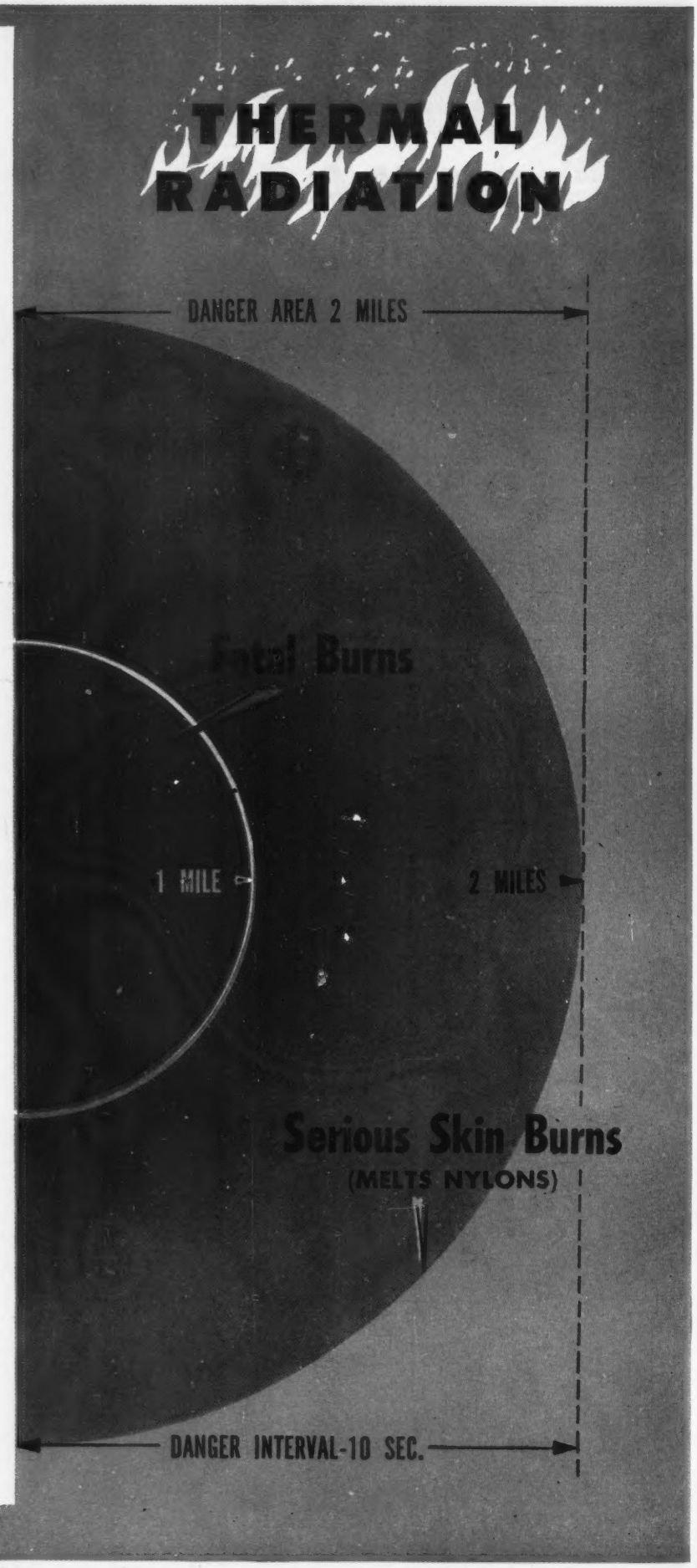
Since the temperature of the ball of fire in an atomic explosion is extremely high, several thousand degrees Centigrade, it is easy to see that thermal radiation is in itself a weapon of great devastation. Actually, about one third of the total energy of an atomic bomb is released as thermal radiation. Such radiation takes place very quickly, most of it in the first three or four seconds after detonation; and after ten seconds there is no more danger from it. The first few seconds are extremely dangerous, however, for persons who are improperly protected. Twenty to thirty percent of the casualties in Japan were due to "flash burns," caused by this practically instantaneous radiation.

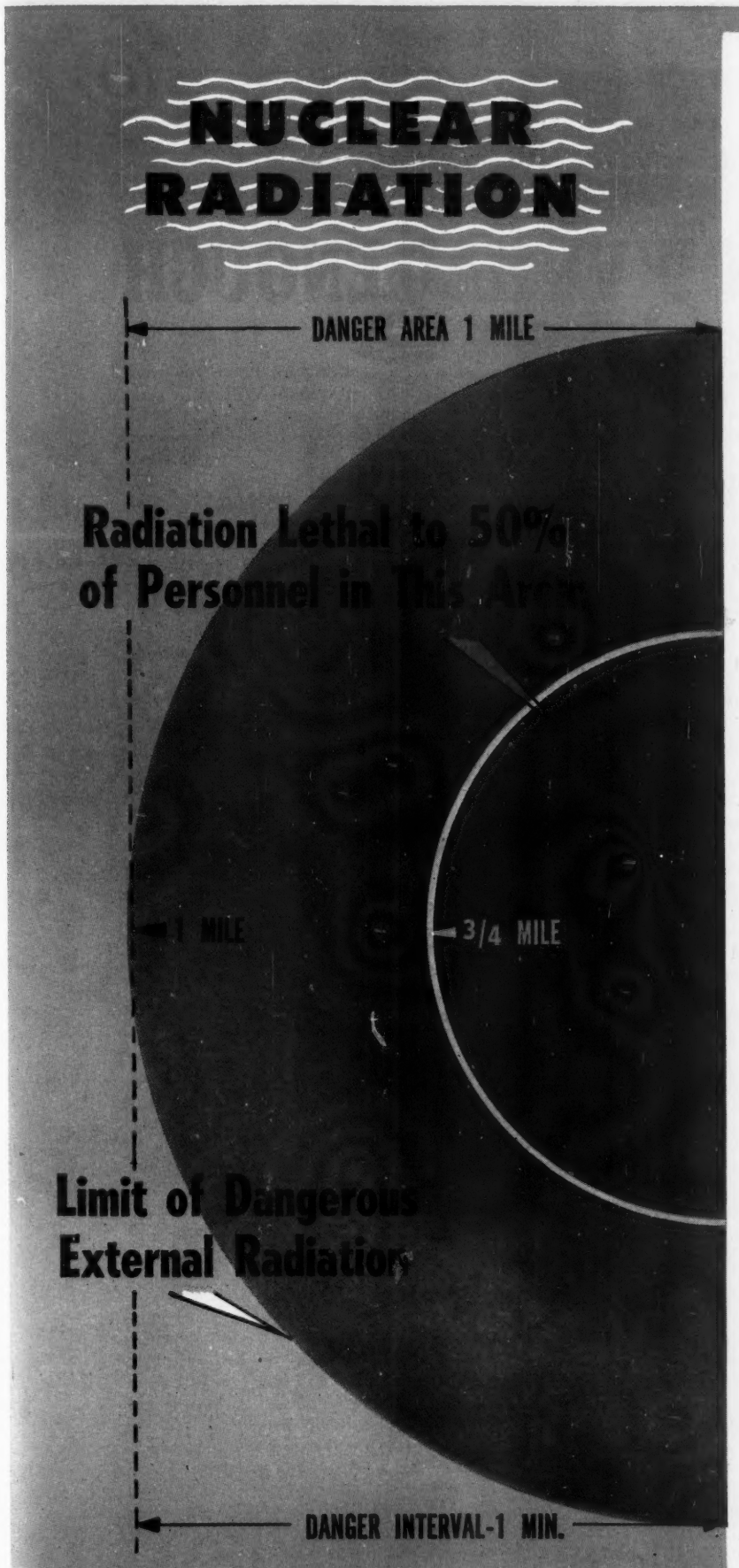
The danger area from thermal radiation depends on many factors, such as the visibility, energy release of the bomb, altitude of burst, and so forth. On an average day for a 20 KT bomb, however, we can make reasonably good guesses about the effects. At one mile from ground zero, severe, probably fatal, skin burns would be experienced on unprotected parts of the body. Light woods, such as fir, maple, and pine, would be ignited and would burn. At distances up to a mile and a quarter, cotton clothing would burn. At two miles, moderate skin burns would be experienced, and nylon would melt.

A distinctive feature of radiation burns is a sharp limitation to areas facing the center of the explosion, due to the fact that the radiation travels in straight lines, like light rays, and only the exposed surfaces are affected.

Since white or light-colored clothes tend to reflect radiation, they afford better protection than dark clothes. In at least one instance, the pattern printed on clothing was burned into the skin of a Japanese woman, the por-

(Continued on page 47)





"Mysterious" Rays Kill Only 15 to 20 Percent of Victims

Nuclear radiation is the third cause of casualties which result from the explosion of an atomic bomb. It is, unfortunately, a most complicated subject and one which is rather difficult to discuss comprehensively without using the special terminology of nuclear physics. However, it is possible to understand how and when nuclear radiation from an atomic bomb can be dangerous, without going too deeply into why this is so.

The nuclear radiation from the bomb is divided into two parts, arbitrarily, called initial and residual radiation. The dividing point is one minute after the explosion. In an *air burst* bomb, there is negligible danger from *residual* radiation, because it comes from fission products which have been carried upward by the atomic cloud and would become dangerous only if the explosion occurred during a heavy rainstorm, or were exploded very near the ground. The initial radiation, however, constitutes a very serious source of personal injury.

Initial radiation which would reach the ground from an air burst bomb consists primarily of gamma rays, which are similar to ordinary X-rays, and neutrons. It has long been known that excessive exposure to any radiation of this general type, such as X-rays, gamma rays, and neutrons, could cause injury to living tissues. The dosage, or amount, of radiation which would be fatal depends to some extent on the individual and to a great extent on the rate of absorption. A total dosage which would be fatal if absorbed at one time would have no effect if spread over several years.

At about three quarters of a mile from ground zero, the total dosage of nuclear radiation in an atomic explosion is such that about 50% of the persons at that distance could be expected to die from it. The maximum distance at which a lethal dose would be received is about one mile. Serious doses of radiation are characterized by nausea and vomiting in one or two hours after exposure, with no other definite symptoms developing in the next week or two, depending on the amount of radiation absorbed. Then vomiting, fever, inflamation of mouth and throat, diarrhea, loss of appetite, and general malaise develops, with death following in from 2 to 12 weeks after exposure.

(Continued on page 47)

We are not helpless *(concluded)*

MAYBE YOU'VE HAD ENOUGH

There are prettier things to occupy one's mind with these days than prolonged discussions of what the A-bomb is and what it will do. The autumn leaves are at their best. The football season is shaping up nicely, and it looks like big things are ahead in television—even color.

Maybe then, you've had enough talk of "total destruction"; of nuclear this and fissionable that; of vomiting and nausea, diarrhea and death from little rays you can't even see or hear. Maybe the little radio jingle "Be happy, go lucky" better suits your frame of mind.

If such is the case you're a sucker.

We have little patience with dramatics, but we have even less with individuals who can be alive in these momentous days and innocently choose to turn their backs on the simple, fundamental problem of national and individual survival.

There is a job for each of us, and there is no time, *no time* to loose.

First we must all work to *prevent* atomic attack, for this is the only real answer. How? The best way we know is to listen and take the advice of the men who have given the problem the most thought; men like Churchill, Marshall, Finletter, Symington and Bradley; men who have unhappily and unwillingly come to the conclusion that the only way to gain the respect of the potential enemy is to have military strength sufficient to convince him that an attack against us would be an open invitation to complete disaster in his own land. We agree with the great majority of the authorities who have stated publicly that a strong strategic air force is the first and most important component of a fighting force built to prevent a fight. Here is the first thing we can do then; see that the Congress of the United States (which means your congressman) stays alert to the necessity of building and maintaining the strongest and most modern Air Force our national economy can afford. This is the finest insurance we know of against the nausea and vomiting caused by nuclear radiation.

But if the bomb falls anyway, as well it might, we must be organized and prepared to reduce death and destruction to a minimum. Another job, therefore, is to adopt a plan of civil defense and implement it on national, state and community levels. Here again, there is no time to lose, for the plans and equipment must be ready *before* the attack. Precautions after the event won't save a single life. How do you go about it? There are many ways.

Go back to your Congressman and tell him that in addition to a strong Air Force you want a better early warning system. Without a positive, simple system for transmission of an attack warning from the military authorities to the civil population at any time of day or night many lives will be lost needlessly.

Another thing. Find out what your local community is doing about the problem. A lot of good material on local defense against atomic attack is being published by such agencies as the National Securities Resources Board. More will come. Keep up with it and see that your community does also.

The third job after prevention and community planning is to learn what to do *individually* if the bomb falls. In subsequent issues AIR FORCE will go into this matter thoroughly, but here is a rapid check list:

Establish a bomb area at home (preferably in the basement) with emergency equipment such as flashlights, an axe and a day's supply of food and water in covered containers.

When (and if) an alert is sounded, shut off all utilities, gas, electricity, etc., where they enter the house. Shut all doors, windows and chimney vents. Close shutters and venetian blinds, then take the family to the shelter area. Have them lie against the wall—preferably the wall in the direction of the blast. Wear light, loose clothing.

After the blast do not use gas, electricity or water until checked for damage or pollution.

If you are caught in the open lie down against a building, in a ditch or gutter. Cover yourself with paper or cloth and discard it without handling any more than necessary after the blast. Cover your eyes with your arms, but keep your hands under your body. Keep eyes covered at least ten seconds after blast.

Establish an emergency rendezvous outside the home for your family in case the blast occurs while you are separated.

Avoid panic. It can kill you if the bomb doesn't.

Yes, we agree there are more pleasant things to talk about than these. But the point is that something *can* be done, and to seek escape by ignoring the problem is both cowardly and stupid. We are not helpless. Perhaps if we learn to look the A-bomb in the eye (as we have attempted to do in the preceding pages) there will be less tendency to run from it. Once we learn what it is and what it can do, *then* we can act and talk intelligently in the accomplishment of the sort of jobs outlined above.

But there is no time to waste.

"I GU MO NEY"...

Which Is What the North Koreans Squeal When Our Jets Come Over—And It Doesn't Mean "Oh Joy"

By James E. Saunders

TOKYO—Ask any of the GIs who trudged through the stinking rice paddies of Korea, "Who stopped the Reds from pushing you into the sea in the early days of the Korean war?" —and they will tell you in short order it was the fighter-bombers of the Far East Air Force.

"I used to throw kisses at them everytime they flew over," said a bewhiskered doughfoot trying vainly to keep the flies and dust from his cold C-rations as he waited for a truck to take him up to his outfit near Seoul.

"I was in the outfit that was down near Masan," he continued. "The Reds had pushed us all over Korea and the old man had told us we had to hold Masan or get shoved clear off the peninsula. That night we dug in and held off four of their banzai attacks. The next morning over came the jets and F-51s and when they finished with those Reds I knew I didn't have to worry anymore."

To determine the effect UN fighter-bombers had had on the North Koreans, I personally visited all old fronts where the UN forces made

(Continued on page 30)

There were plenty of North Koreans ready to get their hands behind their heads when UN forces began swift move north.

Pictures on these two pages were taken in and around Chin Ju two days after it was re-captured. Above, typical debris.

A 500 lb. bomb from FEAF fighter put this bridge out of business for some time.

"I GU MO NEY" CONTINUED

their last stand before their breakthrough in September.

The soldier quoted was typical of many met while going forward. Almost all of them, who had been in the front lines for any length of time, said the Air Force had saved their necks. But this wasn't the story I wanted.

These people were on the *winning* side. They were the "satisfied customers." The ones I wanted were the North Korean soldiers who felt the sting of the Shooting Stars and Mustangs.

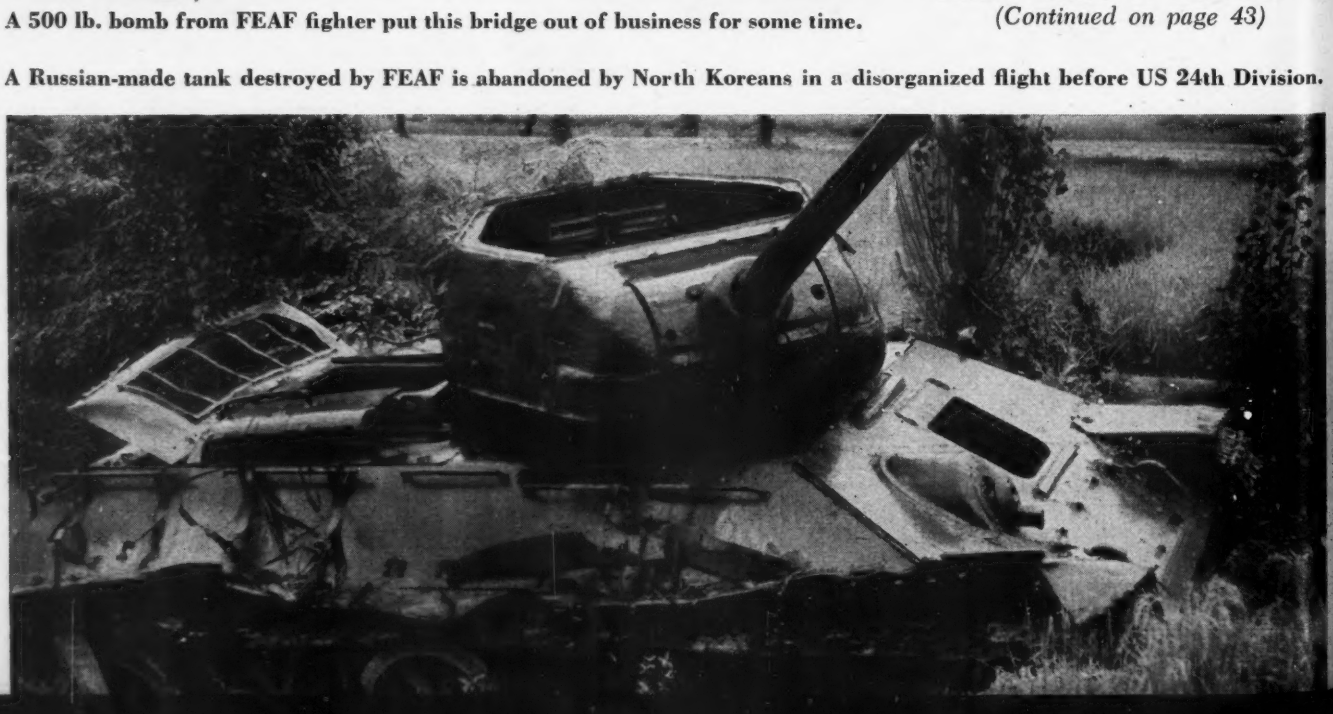
The North Korean is unlike any enemy of previous wars. Although some of his tactics resemble those used by the Japanese in World War II, the similarity ends right there.

The Korean Communist is a cold, calculating fanatic. Like the Japanese, he sometimes uses banzai attacks to overwhelm his opponents. But unlike the Japanese he won't stop when hit. He has to be killed before he stops. He knows or expects no mercy. As a result there are few prisoners that are really what you would call "True Communists."

My first stop was at the giant prisoner of war camp near Pusan—the largest in Korea—commanded by Colonel Glenn G. Dickerson of

(Continued on page 43)

A Russian-made tank destroyed by FEAF is abandoned by North Koreans in a disorganized flight before US 24th Division.



Above, a few of the assorted tanks and busses knocked out by the planes that "made no noise until they were gone."

A North Korean truck—the victim of FEAF Fighter Strafing.

Another Communist tank that never made it out of Chin Ju.

A lonely Korean peasant stands under the broken arch of bridge near her home in contemplation of the cost of war.

How a MOS Becomes a Man

At the numbered air forces bodies and personalities are found to fill known vacancies, but the $64 question is still, "When will I be called?"

June 25, 1950 marked among other things, the day on which Air Force reservists began intensive speculation on their probable proximity to Air Force blues. Some were eager to get back in; others played the reluctant bridegroom. Whatever their attitudes, the Air Force soon had, and still has, the final say. If those who wanted in had a critical MOS number, they usually didn't have to wait long. And while deferments were granted, and are still being granted, to those with well-founded reasons, the man who pleaded his case by telling the deferment board: "Good heavens, gentlemen, if I had foreseen this Korean situation I would have resigned from the reserves two years ago," simply stamped his own ticket to the reception center.

For the Air Force itself, the problem was more complex. It was a case of "Call out the Reserves" and do it yesterday. But before more than a handful could be called, the pump had to be primed: Personnel shortages throughout the Air Force had to be assessed and broken down by quantities and SSNs. Records of individual reservists had to be brought up to date, deferment policies had to be established and, in short a new administrative structure flexible enough to handle the shifting demands of each day had to be set up and put into action quickly.

While Continental Air Command was given overall recall responsibility, the job of selecting reservists for extended active duty—that is, of taking an SSN vacancy and finding a man to fit the bill—fell to the numbered air forces since they are the custodians of all reserve records. It is at the numbered air forces that a MOS becomes a man. To determine the process by which their administrative machinery converts a nameless request into a letter ordering Joe Doakes to a reception center, the editors of AIR FORCE Magazine walked a recall requisition through First Air Force headquarters at Mitchell AFB, N. Y., whose jurisdiction extends over the 15 northeastern states containing roughly 46% of the country's reservists. The Reserve Section at First Air Force is headed by Col. Frederick P. Knoll under whose direction a military and civilian staff was quickly assembled and whose untiring around the clock efforts rapidly brought order out of chaos.

Col. Frederick P. Knoll, Deputy for Reserve Administration, First AF

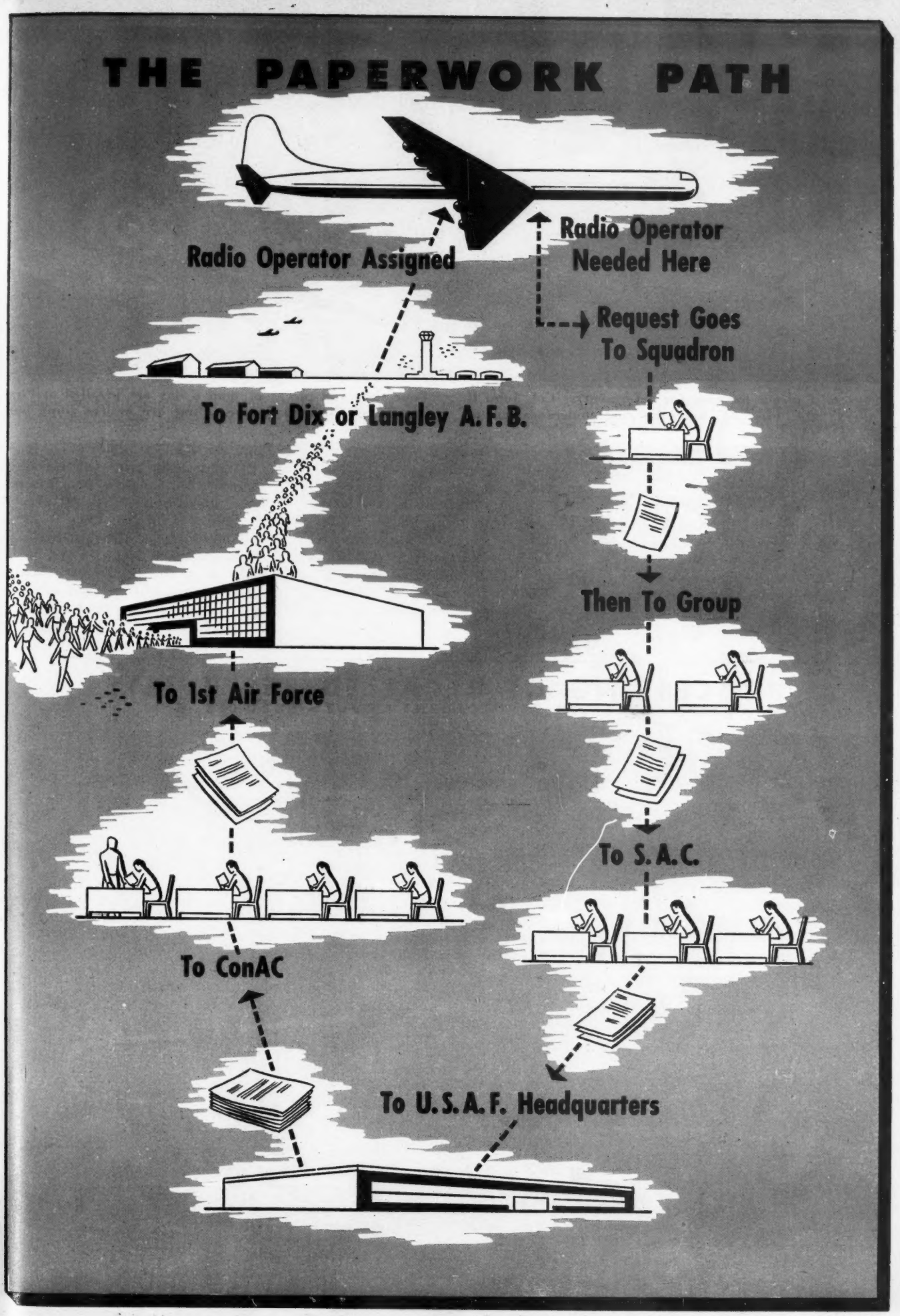
One week after the Korean conflict broke, First Air Force sent out a questionnaire to reservists which enabled the classification board to bring their records up to date, with special emphasis on correct SSNs. The following week, they called for volunteers in electronics and communications, and by the middle of July, the First Air Force alone was sending 400 officers and men to its reception centers at Fort Dix and Langley AFB. At first it was on a completely voluntary basis, but by August 1, quotas could no longer be filled and involuntary recall went into effect.

By October first, the First Air Force had recalled some 13,000 airmen, 1,800 company grade officers, had rejected 3,700 airmen and officers as being physically unfit, undesirable or hardship cases, had deferred 2,100 for a period of more than 30 days, had granted 900 delays in reporting of less than 30 days and had received 250 requests for resignation, only one of which was granted. To add to their administrative burden, on hand are 5,000 applications for commissions and every day an average of 4,000 pieces of mail and 500 phone calls must be handled. All this doesn't leave much time for morning coffee.

Continental Air Command Recall Requisitions are fed directly into First Air Force Quota Control and Reports Division. The ConAC forms list the number of men needed by SSN and grade, and reports the organization to which they will be assigned. One line of a ConAC requisition might read, for example, SSN: 4,000; Number of officers: 3; Grade:

(Continued on page 34)

The hypothetical case of the missing radio operator and now he finally turns up in the person of a qualified reservist is illustrated here. Until the very end, it is all paperwork with plenty of carbon copies. The requests trickle in from the squadron level, swell as they go up the chain of command until they reach a torrent pouring into USAF headquarters from all major commands. At the Pentagon, they are reviewed with an eye to overall plans, budgetary problems, legal limitations and basic policy. Those which are approved are forwarded to ConAC, the agency responsible for the recall program. ConAC breaks down the requests among the various numbered air forces in the U. S. seeing to it that each part of the country gets no more or less than its share of recall requisitions. Since the First Air Force area contains nearly fifty percent of the total reserve pool, it gets the lion's share of the load. And while it has plenty of paperwork to do, this is the place where the missing radio operator develops a body and a personality. From First Air Force the volume of flow begins to go down again: first when it split between the reception centers and then when the recalled men fan out to their individual duty stations.


THE PAPERWORK PATH
Radio Operator Assigned
Radio Operator Needed Here
Request Goes To Squadron
To Fort Dix or Langley A.F.B.
Then To Group
To 1st Air Force
To S.A.C.
To ConAC
To U.S.A.F. Headquarters

A reservist pleads his case for deferment as Col. John R. Callery, AJA, First AF, takes his case under advisement.

Four thousand pieces of mail a day are handled at First Air Force's Reserve Section. These are notices going out.

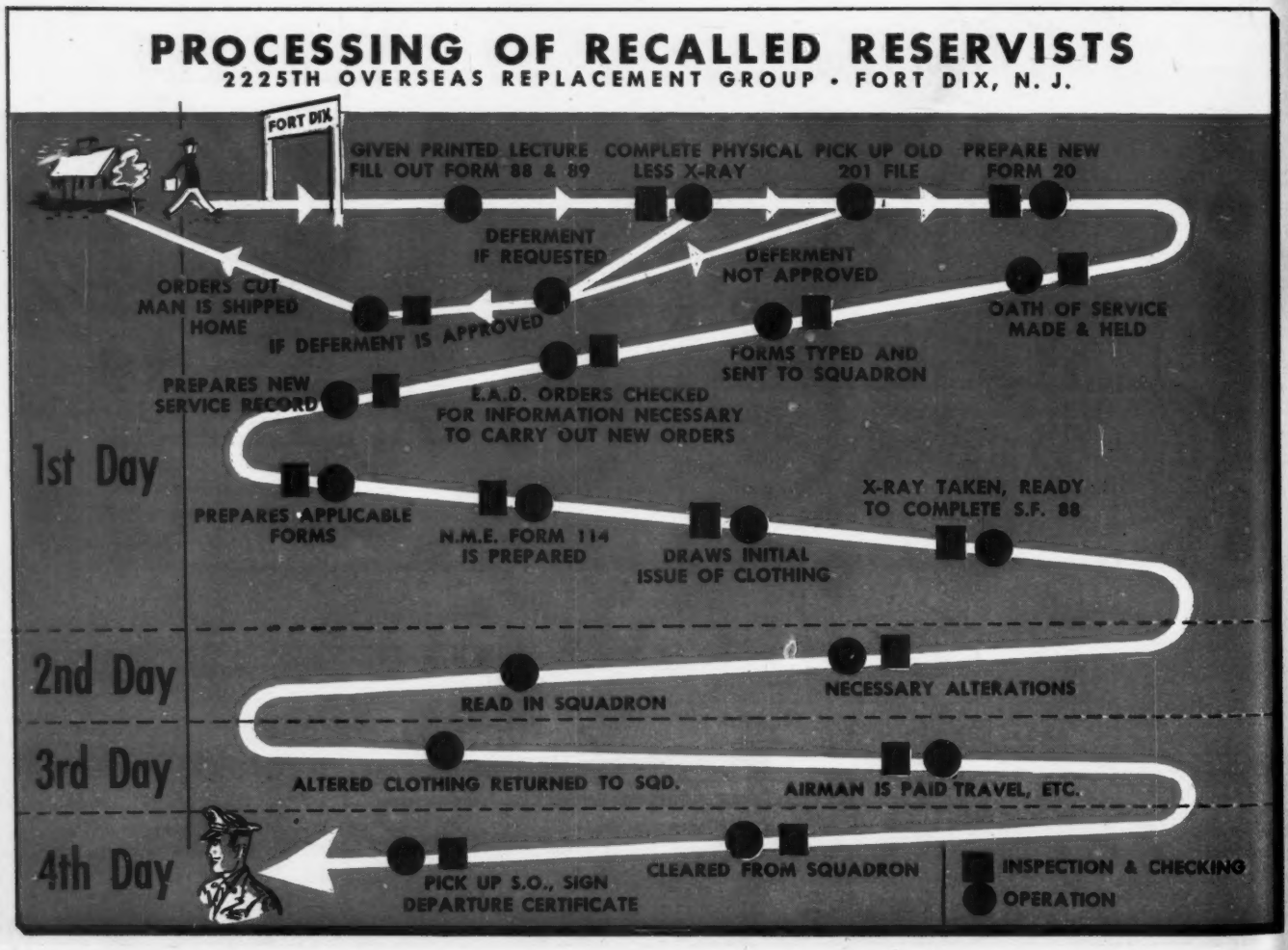
MOS A MAN

CONTINUED

Company Grade; Assignment instructions: Hq. & Hq. Sq., 2500th AB Gp., Mitchell AFB, N. Y. The request is clear. First Air Force at once knows everything about the vacancy they must fill except the name of the man who will fill it. From then on their operation is devoted entirely to selecting the man and sending him on his way to a reception center.

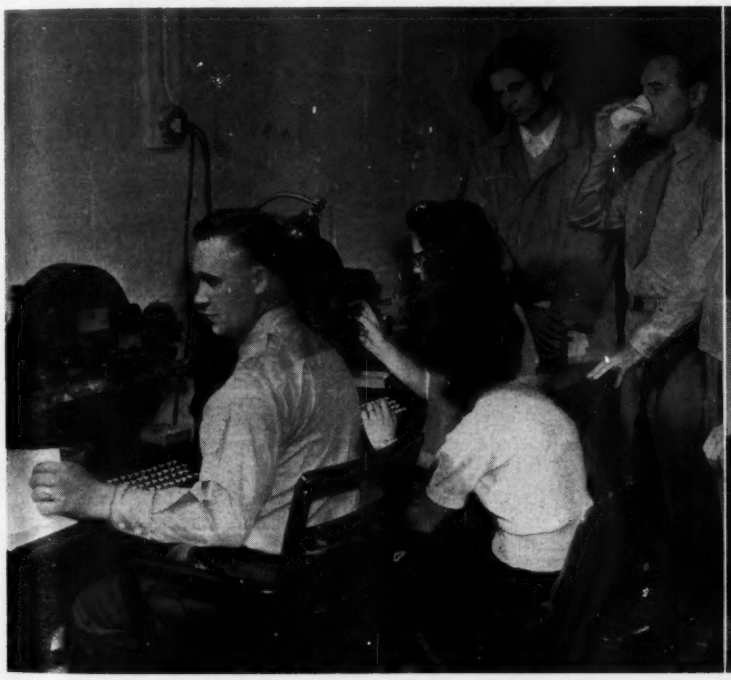
Quota Control breaks down the ConAC requisition and sends suitable forms to the Recall Selection Division for further action. In one room at Recall Selection there is a long table. The walls are lined with card files and other tables are piled high with bulky folders. The card files contain the names of every reservist, officer or man, who has not been called to extended active duty. The cards are broken down by MOS and under each MOS are two sections, one in the front for volunteers and one to the rear for non-volunteers. When forms are received from

(Continued on page 42)


PROCESSING OF RECALLED RESERVISTS
2225TH OVERSEAS REPLACEMENT GROUP • FORT DIX, N. J.
FORT DIX
GIVEN PRINTED LECTURE FILL OUT FORM 88 & 89
COMPLETE PHYSICAL LESS X-RAY
PICK UP OLD 201 FILE
PREPARE NEW FORM 20
DEFERMENT IF REQUESTED
DEFERMENT NOT APPROVED
ORDERS CUT MAN IS SHIPPED HOME
IF DEFERMENT IS APPROVED
OATH OF SERVICE MADE & HELD
FORMS TYPED AND SENT TO SQUADRON
PREPARES NEW SERVICE RECORD
E.A.D. ORDERS CHECKED FOR INFORMATION NECESSARY TO CARRY OUT NEW ORDERS
1st Day
PREPARES APPLICABLE FORMS
N.M.E. FORM 114 IS PREPARED
DRAWS INITIAL ISSUE OF CLOTHING
X-RAY TAKEN, READY TO COMPLETE S.F. 88
2nd Day
READ IN SQUADRON
NECESSARY ALTERATIONS
3rd Day
ALTERED CLOTHING RETURNED TO SQD.
AIRMAN IS PAID TRAVEL, ETC.
4th Day
PICK UP S.O., SIGN DEPARTURE CERTIFICATE
CLEARED FROM SQUADRON
INSPECTION & CHECKING
OPERATION

At orientation lecture, red tape expert briefs reservists reporting for recall and processing at Fort Dix Reception Center.

In case a recallee had been wondering what happened to his old 201 file, file clerk digs it out ready to be brought up to date.



Above, the boys watch skilled operators use the latest big business methods to punch out data for locator cards, pay cards, and dog tags. The new machines keep mistakes to a minimum. Below, it's swearing in time and they're back in the Air Force.

Above, the best station of them all—the finance office—where recallees collect travel pay from their home to the processing center. Below, the final stop at Dix where the ex-reservist picks up his first official ticket to his new station-to-be.

Chicago and Cleveland Report Airability

Squadron members go all out in testing their communities' ability to meet the heavy responsibilities of today's air age

Chicago and Cleveland AFA squadrons have taken the lead throughout the Association in checking the air pulse of their respective communities as part of first phase in AFA's recently-launched Airability Program.

Chicago's South Shore Squadron No. 21 is trying to determine with its own resourcefulness whether the City's south side has airports and plans toward airports that will insure maximum growth, prosperity, and convenience for the area, Squadron Commander Bob Ryan has announced.

Squadron members now are interviewing business leaders who believe better airport facilities are needed to support community growth and commerce.

One of the first Chicago reports showed waterways at 13600 Hoxie Avenue form the only protected seaplane base in the area. It has three adequate water runways, each 5,000 feet long, the Squadron reported.

Otis E. Kline, assistant to the president of United Air Lines, recently explained the entire coast to coast operation of his airline to Airability committee members James Baker, James Farrell and Allan Riihinen.

Edgar Zimont, past commander of the Squadron, has visited the Snyder Aircraft Corporation where he interviewed officials and examined parts and supplies for planes, while Bob Ryan recorded the Midway Airport's development program and checked possibilities for maximum growth and convenience.

Finances of the Chicago-Hammond Airport, Lansing, where Squadron 21's own planes are based, have been studied by AFA member John Waters. Airport owner Kurt Kunan opened his books to the Squadron to show what the airport is planning in way of improvements.

The activities of the South Shore AFA Squadron in the initial phase of the Airability Program was reported recently in a full page feature of photos and news by the Chicago Sunday Tribune.

The Cuyahoga Founders Squadron of Cleveland is rushing ahead full speed on the Airability Program, Wm. Lee Birch, chairman of the unit's Public Activities Airability Committee No. 1, has announced. This AFA unit is the first to forward the report of Survey Team No. 1 to National Headquarters.

The specific area covered by Mr. Birch's surveying team has an approximate population of 909,546 with two airports serving non-commercial and airports serving airline-type aircraft and fourteen serving non-commercial and privately owned aircraft only.

Greater accessibility to the community airport for the center of population and manufacturing will tend to increase the importance of aviation to the Cleveland community, according to Mr. Birch's report. The Survey also stated that the Airability Program by prodding and revealing can be a factor in helping to achieve the ultimate goal.

The Report revealed that the present municipal government of Cleveland is extending every effort to develop the lake side property of downtown Cleveland (within three minutes of the main business area) to the point where it can be used eventually for the main airliners coming in.

Mr. Birch concluded that the biggest impediment to full scale advancement in long range aviation planning has been the municipal-county-small community diversion of time and effort.

Members of the Squadron's Public Activities Airability Committee No. 1 in addition to Mr. Birch are Mario Pacini, Vincent Pedini, Edward Plecko, Henry Strauss, and Randall M. Ruhlman.

Squadron Commander Larry Hastings, right, gives Toledo's Mayor Michael V. Di Salle a preview of the Squadron's Third Annual Air Fair exhibits and planes.

Bill Knepschield of Toledo accepts model plane trophy from John Myers, Chairman of the Air Fair Model meet.

Toledo Stages Air Fair

A ten-act show of "aerobatics" highlighted the Toledo AFA Squadron's third annual Air Fair held from August 23-27 at the Toledo Municipal Airport. The Cole Brothers' Air Circus performed the last two afternoons of the Air Fair. Everything at the 5-day fair was free to the public, with the exception of the Chamber of Commerce co-sponsored air tours in the Toledo area.

Larry Hastings, commander of the Toledo (Joe E. Brown) Squadron, said the show was presented to stimulate interest in aviation in the community in hopes Toledoans would improve their air facilities.

A 60-foot animated display describing the Berlin airlift was brought to the Fair by the USAF Exhibit Unit from Wright-Patterson Air Force Base, Dayton. The exhibit included a large photo montage of the airlift in operation, ground control units and flights of guided aircraft.

The Air Force also presented a selection of aircraft models, representing the planes now in the AF.

Flying saucers, flying wings and radio-controlled planes were among a variety of craft entered in a model airplane demonstration at the airport on the final day of the Fair. Participants were members of the Toledo Model Airplane Club with William Knepschield of Toledo taking the honors.

Lieut. Gen. Jimmy Doolittle has written to Squadron Commander Hastings commending the organization "on its efforts to bring to the attention of the people of Toledo the importance of aviation not only to our national security but also to our national economy.

"The Air Fair . . . should have the effect of interesting your community in the potentialities of the airplane and its vast importance in our national life," Gen. Doolittle wrote.

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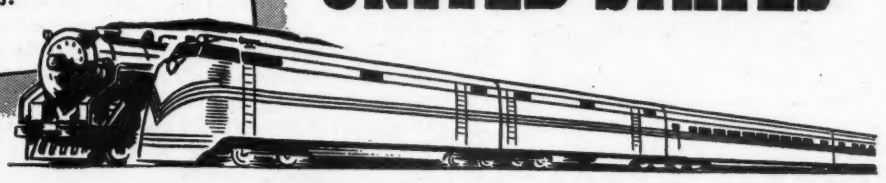

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AFA STATE ROUNDUP

CALIFORNIA

Fresno: A special exhibit of the air power making up the USAF was one of the attractions of the 1950 Fresno District Fair.

Collected and prepared by the Fresno Squadron, AFA, the display featured several models of planes which are making history in the Korean War, as well as models of several others still in the production stage.

The models, collected from aircraft manufacturers and active squadrons in all parts of the U. S., included such famous planes as the B-50, built by airmen at the Castle Air Force Base near Merced.

Others were the newest jet aircraft such as the F-80, F-84, F-86 and F-90, as well as Navy craft now in action over Korea.

Nearly 200 pictures of other types of aircraft also were on display.

Films shown to the public by the AFA Squadron were Target Tokio and Fight For the Skies. The first is the story of the B-29s and the other deals with aerial battles of World War II over Germany.

Squadron Commander S. S. Boghosian, 1360 Echo Avenue, Fresno, said the exhibit was intended to keep the public abreast of developments in aviation and to stimulate community interest in the nation's air power.

MARYLAND

Baltimore: A general re-activation of the Baltimore Squadron, AFA, to include training in the latest air tactics of warfare, was announced recently by Charles Purcell, commander.

Arrangements have been completed, he said, to have members of the local "wing" train with the Maryland Air National Guardsmen at Harbor Field each Friday night.

This training will include everything except actual flying, Commander Purcell pointed out, and added:

"This will eliminate the traditional rivalry between the two groups and put us together in work for the common cause."

All past and present members of the Association in the Baltimore area were urged to contact Commander Purcell at once at 1102 North Charles Street, zone 1.

(Continued on page 40)

A Salute to Fallen Airmen

Attending the dedication in Arlington National Cemetery of a marble monument erected in memory of five American airmen shot down over Yugoslavia four years ago are, left to right, Constantin Fotich, former Yugoslav Ambassador to the United States; Dan L. Kovacevich, of Wheeling, W. Va., Treasurer of the Serb National Federation; Michael Radakovich of Joliet, Ill., Federation President; Gen. Carl A. Spaatz, former Air Force Chief of Staff; Arthur Bliss Lane, former United States Minister to Yugoslavia; and Milan Obradovich of New York, a representative of the Serbian National Defense Council of America.

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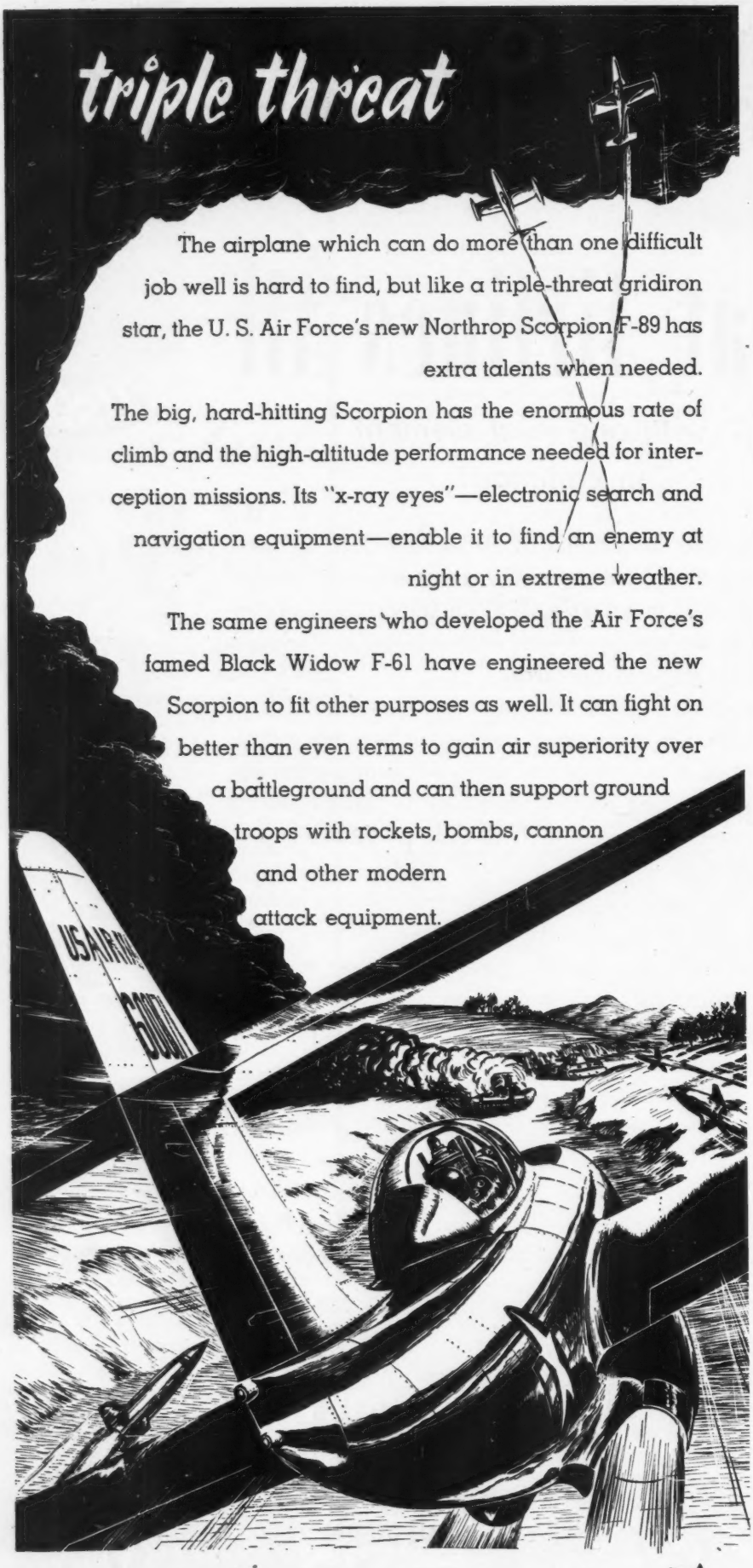
triple threat
The airplane which can do more than one difficult job well is hard to find, but like a triple-threat gridiron star, the U. S. Air Force's new Northrop Scorpion F-89 has extra talents when needed.
The big, hard-hitting Scorpion has the enormous rate of climb and the high-altitude performance needed for interception missions. Its "x-ray eyes"—electronic search and navigation equipment—enable it to find an enemy at night or in extreme weather.
The same engineers who developed the Air Force's famed Black Widow F-61 have engineered the new Scorpion to fit other purposes as well. It can fight on better than even terms to gain air superiority over a battleground and can then support ground troops with rockets, bombs, cannon and other modern attack equipment.
NORTHROP AIRCRAFT, INC., Hawthorne, Calif.
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ROUNDUP CONTINUED

NEW JERSEY

Newark: The first meeting of the Boys' Club Model Plane Group was held on September 12 at the Newark Boys' Club, Littleton and Thirteenth Avenues. The meetings, sponsored by the Newark Squadron, AFA, are held every Tuesday night from 7:30 to 9 p. m. and are limited to 25 boys.

The Squadron supplies the model plane kits, tools and accessories. When the models have been finished by the boys, they are allowed to keep them.

Besides the regular monthly business meetings, the Newark Squadron sponsors a dinner every month. This social affair is for members, their wives, girl friends, sisters or friends.

An open forum on the current plans for the Newark Airport will be held at the December meeting, Squadron Commander Jack Hagerstrom has announced.

Mr. Hagerstrom has also revealed that Part I, "Civic Participation" and Part II, "Private Participation," of the Airability Program have been started by the Newark Squadron.

Other officers of the Squadron besides Mr. Hagerstrom include Jack Boehm, vice-commander; Fred Daum, treasurer; and Alex Gellert, 55 Lehigh Avenue, secretary.

NEW YORK

New York City: A Planning Committee whose purpose will be to coordinate the activities of the squadrons in connection with the present military emergency was named at the September 18 meeting of the New York First Division, AFA, in New York City.

The Committee, composed of Walter Hartung, Warren DeBrown and Mary Gill Rice, will not only be expected to figure out what happens to the squadrons who strength is depleted but also to carry out to its conclusion how AFA may help in the civilian defense program as regards the Korean situation.

A majority of the meeting was devoted to a discussion of the Airability Program by Stanley Demzer of the Brooklyn Squadron.

The squadrons represented at the meeting were: Queens, N. Y. C. No. 1 (WAC), Newark, Manhattan No. 1, Staten Island, Brooklyn, La Guardia, Passaic-Bergen and Mitchel. Also present were Mary Gill Rice, New York State Wing Commander, Warren DeBrown, New Jersey Wing Commander, and Herbert Heimberg, Commander Second Group.

OHIO

Columbus: Participants in the recent Powder Puff Derby and passengers in their planes were luncheon guests of the Columbus Squadron, AFA, at the Dobbs House Restaurant in Port Columbus on August 24.

The Derby, a yearly event of the Ninety-Nines, took off from Columbus on August 24 and terminated at Logan International Airport in Boston on August 25.

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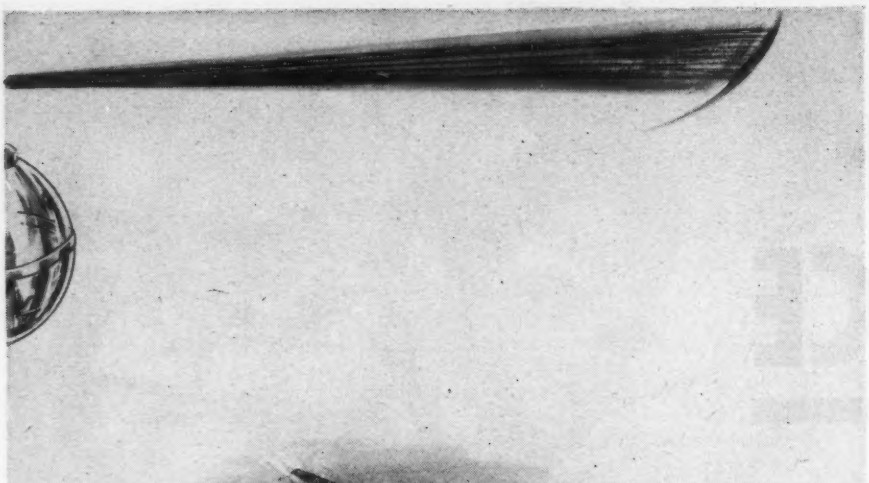

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When the U. S. Navy focused attention on the helicopter as a means to combat underwater craft and the new long range Schnorkel-type submarine in particular... Bell Aircraft Corporation stood ready and well qualified to supply the right answer.

Winner of the Navy's recent anti-submarine helicopter competition—was Bell Aircraft, with a design which incorporated important advances developed during a decade of pioneering, engineering and manufacture of rotary wing aircraft.

Bell helicopters are veterans of military service, by all arms of the Defense Department. The Navy has HTL-1s, HTL-2s and HTL-3s for everything from weather investigation to torpedo spotting. Furthermore, it has assigned helicopters to the Marines for liaison and observance work and to the Coast Guard for patrol and rescue missions. The Air Force, the Army Field Forces and the Corps of Engineers also find a multitude of uses for Bell Helicopters.

Back of the achievements of Bell helicopters are 10 years of development, experimentation, testing and product improvement—and more than 100,000 hours of flight time in actual field operations in the United States and 29 foreign countries. The record of these helicopters "in the service of the services", and in other fields of aviation is significant of the high level of Bell Aircraft design and performance.

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MOS A MAN CONTINUED

Quota Control requesting, say, 15 men with a certain MOS, a man goes to the card file on that particular MOS and attempts to fill the order from the volunteer section. If he doesn't get enough, he pulls as many other cards as necessary, with some to spare from the involuntary file. The order in which these cards are pulled is, of course, of the utmost importance to every reservist. This is the operation which determines whether Bill Jones or Bob Smith who have not volunteered are ordered to active duty this week, next month, or perhaps not at all.

The First Air Force reports that these records are being constantly screened and that vacancies are filled by choosing the best qualified men. Many things are taken into consideration in determining qualifications. Efficiency ratings are, of course, very important. Factors like length of service in actual performance of specialties, grades in service schools, number of combat flying hours (in the case of rated personnel), are weighed against a mans age, number of dependents, etc. In some cases one man may be just slightly better qualified than another, but this slight difference may be the determining factor when it comes to a choice of Jones or Smith.

The AG section is then requested to cut special orders ordering the reservist to the processing station. In the First Air Force Area, reservists from Maine, Vermont, New Hampshire, Massachusetts, Connecticut, Rhode Island, New York, New Jersey, Pennsylvania and Ohio are processed at Fort Dix, N. J., and those from Delaware, Maryland, Virginia, West Virginia and Kentucky go through Langley AFB, Va. Their 201s go to the processing station to be brought up to date and then are sent to the reservist's duty station.

This is the machinery. But there are some things a man can do on his own behalf. If he wants extended active duty, he can volunteer. That doesn't mean he will be called right away, it simply means that if men are needed with his particular MOS, and he has volunteered, he will be called before those who have not. But it is possible for a man with a critical MOS who hasn't volunteered to be called before a man with a non-critical one who has.

Those who seek deferments will have plenty of opportunity to present their case. In certain open and shut cases, the reservist need only submit documentary evidence by mail without actually appearing before a deferment board.

Three permanent deferment boards, all under the jurisdiction of the Air Judge Advocate, First AF, are located at First Air Force headquarters, Fort Dix and Langley Field to hear cases from the First Air Force Area.

Actually, there is nothing a man can do to assess accurately his chances of recall, or approximate date of recall. Manpower demands shift daily not only with respect to numbers needed but also with respect to critical SSN's. No one knows all the answers.

"I GU MO NEY" CONTINUED

Blacksburg, Virginia.

Through an Army interpreter, five prisoners were selected from different sections of the camp to make sure their viewpoints would be representative.

The first prisoner was Private Lee He Yoon. This 20 year old soldier, whose home was at Poong San in the Republic of Korea, had been in the Army just three months. The North Koreans had forced him to serve.

I asked him if he had ever seen any of his tanks knocked out by aircraft—and if so—where and how. His answer came back in a torrent and the interpreter had to slow him down.

Lee He Yoon had been in only one battle—Tabudong. Here he had seen a tank and some self-propelled artillery knocked out by two airplanes "that made no noise until they were gone." He said they went "Whoosh" as they went over and when he turned to the tanks they were flaming.

When asked why he surrendered he said he was the only man left in his battalion and knew he would be killed by those "whoosh airplanes," so he found a GI and gave himself up.

The next prisoner was Captain Lee Yong Su of Nanam province. He had been in the North Korean Army three years as a Regimental Supply Officer.

This Communist was quite talkative and said his outfit had crossed the 38th Parallel on July 2. At that time his regiment was at full strength. This included 23 trucks, 16 self propelled artillery pieces and 3000 men.

The interpreter ran through the same series of questions asked the other prisoner. "Have you ever seen any tanks, trucks, or other vehicles knocked out by aircraft and if so, where and how."

He too began talking furiously. But was finally calmed and this is his story. By September 17, just one month and fifteen days after his unit crossed the 38th Parallel, only one truck and five self propelled artillery pieces remained. The others had been completely destroyed in a series of fighter plane attacks.

On August 3 seven of his tanks were rocketed by four F-51s and three jets. A small single engined airplane (T-6) came over and circled them a few minutes. Then the fighter-bombers came down to strafe and rocket them.

He, in turn, asked if those single engined airplanes had radios to listen to what was said on the ground for every time those small airplanes came over they brought jets and F-51s to destroy more of their equipment or men.

He was told they were just observer aircraft sent to find targets and had no special listening device that could pick up casual conversation or noise from the ground.

He didn't believe it. He pointed out that they had 16 self propelled artillery pieces when they started their drive southward and all but five of these were destroyed in the same manner as the tanks; first a small single

(Continued on page 46)

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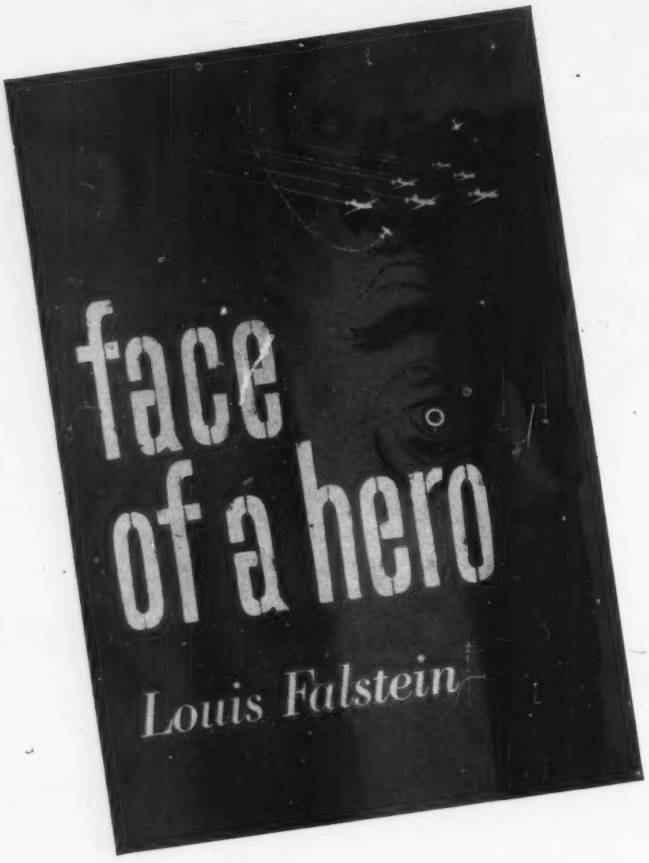

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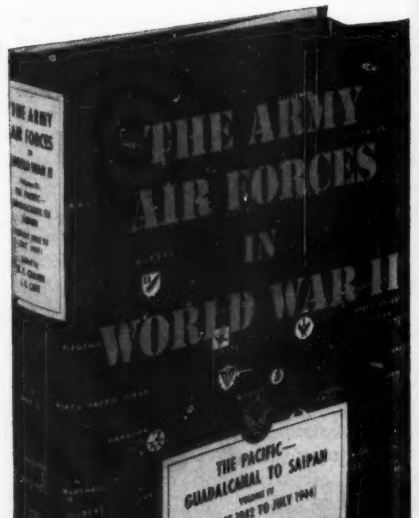

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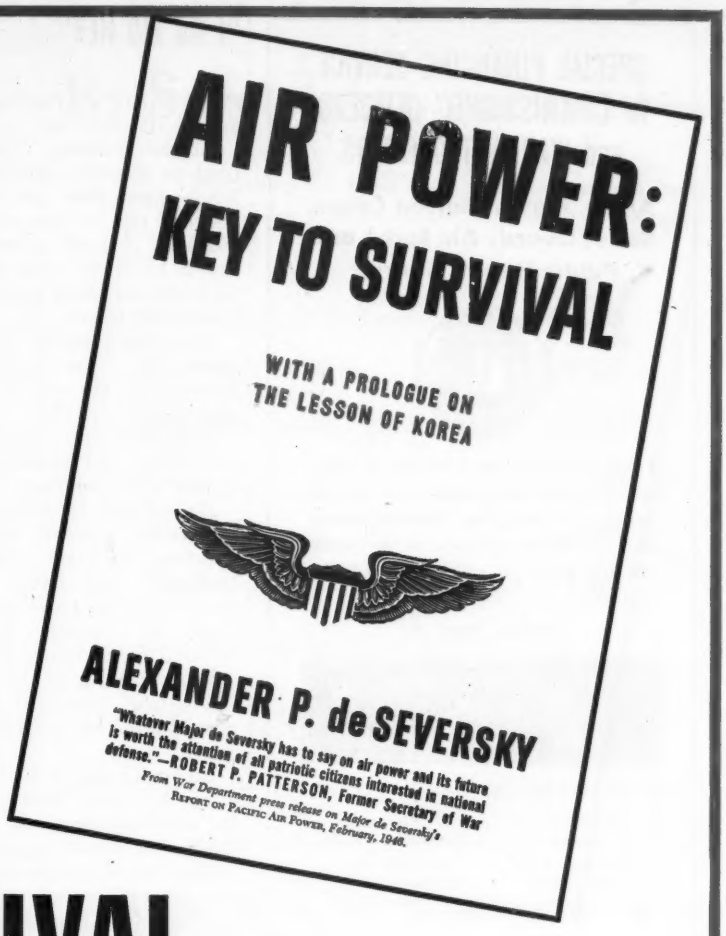
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"I GU MO NEY"

CONTINUED

engined aircraft circled, then the jets and F-51s came in.

At the Naktong river his regiment tried to rebuild a bombed out bridge. Every time they got it fixed it was knocked out by "aircraft that had two engines." (North American B-26 Invaders.) These incidents demoralized his troops so much that he decided that it was best to give up.

The third prisoner I interviewed was Major San Tae Kwang, hometown, Pyongyang. He was a medical officer and had been in the Army two years.

Though never at any of the fronts, this officer said he had seen the results of the fighter-bombers of the Air Force.

He had seen 18 different places where bridges and railroads were destroyed by airpower. Like the other prisoners he confirmed that North Korean troops were forced to move only at night because of aircraft that relentlessly bombed them during the day.

While talking to this officer an F-80 "whooshed" overhead. The interpreter asked him if he had ever seen those in action.

Major Kwang said those were feared more than any other type of aircraft. He said they never made any noise and always hit whatever they pointed at.

The last North Korean prisoner interviewed at this camp was Lee Pong Sub. A resident of Ham Hung city, this 24 year old corporal said he had been in the North Korean Army only two months. When asked how he was able to make a promotion so fast he answered, "Most of the North Korean non-coms in the unit had been killed."

This corporal's testimony was similar to the others. He was deathly afraid of the "airplane with no propeller" and reiterated that his outfit could move only at night because of constant strafing and bombing in the daytime.

Next stop was the advanced headquarters of the 25th Infantry Division then at Masan. This division was making plans for a breakthrough. Their first objective: Chinju.

The city of Chinju had been one of the Reds' strong points. As a result, it had borne the brunt of every type of bomber and fighter attack the United Nations used in Korea. When it wasn't being strafed and rocketed by fighter-bombers, it was the target for B-26 night intruders. In the daytime Superforts of the FEAF Bomber Command worked it over.

The city was a rubble. Not a building was left standing. It was like a miniature Berlin in a rice paddy setting.

The 25th Division was driving so fast they left small pockets of enemy troops scattered throughout the hills along the route. These kept MPs busy with their constant and sometimes surprising surrenders.

A group of these dejected Reds told the same story as the prisoners interviewed previously.

"We were at Kosong," said Kim Kye Sun, a 28 year old draftee sergeant from Seoul who watched US trucks and tanks rolling forward with a look of disbelief. "Our company commander kept sending out patrols. They kept going out and never returning. Finally there were only two of us left.

"We heard an airplane overhead and ran for a bridge to hide," he continued, "we heard a big noise and I thought they had bombed us. Then I heard a rumble and peeked out to see what it was. I saw many tanks and when they stopped near us, I heard English so I told the other soldier we had better surrender for the Americans are here."

Asked if he had ever been strafed or rocketed by jets or F-51s he answered, "Only once. A 'whoosh plane' dropped fire bombs on us." (Napalm.) He said that 300 men were killed with just that one bomb.

The other men in this group told stories identical with Corporal Sun's.

The 25th Division pushed on to liberate the town of Namwon. Interned here were 92 American who had been captured during the early part of the Korean conflict.

These tired, dirty, and louse-ridden men had been spared by the "Grace of God" and the Fifth Air Force.

"They had our hands tied behind our backs," said Corporal Sam L. Cochran of Millen, Georgia. They told us they were taking us to Seoul and this was the procedure used when transporting prisoners.

"They lined us up against the wall and had just finished tying the tenth man when two F-80 jets came screaming in to strafe and rocket them. Our guards ran outside and that was the last we ever saw of them.

"A short time later we heard a rumble and someone shouted, 'That's tanks! These jets must have missed!' Within a few minutes the tanks were in the town and a few minutes later we were free men. They were *our* tanks not Reds. But if it wasn't for those jets scaring those guards, I doubt that we would be alive."

"They marched us only at night," said another former POW, Corporal Robert R. Nielson of Chicago, Illinois. "In the daytime they hid us in barns. Whenever they heard an airplane they made us lie down and keep quiet for fear the pilot of the airplane would 'hear' us if we talked."

These tired but jubilant men told of atrocities, of being marched for hours without shoes; of beatings when they didn't sit as instructed; of one man being killed because he was wounded and too weak to continue. Each of them was a story of heroism, of American guts when the going was tough, but each of them said almost the same thing about the Air Force fighter-bombers.

"The Reds were afraid of the jets and F-51s more than any weapon. They just couldn't stand up under the fighter strikes," said Second Lieutenant Kenneth R. Reid of Mt. Holly, New Jersey, the only officer in the group. Reid had removed his bars and when questioned

(Continued on page 48)

BLAST DAMAGE CONTINUED

These effects may vary considerably depending on terrain, altitude of the burst, energy release of the bomb, and so on. Shielding effects of hills were quite noticeable at Nagasaki, where several houses on the reverse side of a steep hill only 8,000 feet from ground zero suffered only broken windows.

A secondary effect of the blast is destruction and damage of electrical and gas utilities with resultant fires at distances up to two miles from ground zero. The widespread fires are not easily put out, because breakage of water pipes in houses and buildings results in loss of pressure in the water supply, and the fire fighting capacity is practically eliminated.

THERMAL RADIATION CONTINUED

tions under the dark areas being burned. Loose clothing in two or more layers, is better than tight clothing for maximum protection.

Wooden structures are set afire near the center of the blast, but, curiously enough, the thermal radiation is not the major source of fires. Those started by this radiation are, in many cases, blown out immediately by the high winds caused by the blast. A secondary effect of the blast, however, is to overturn stoves, break gas pipes, and cause electrical short circuits, thus starting fires in combustible structures. The major destruction caused by the blast, in effect rendering much of the built-up structure near ground zero into kindling wood, facilitated the spread of the fire; and finally, broken water pipes reduce pressure in the water mains, making fire fighting quite difficult. Therefore, although thermal radiation is not a major cause of fires, fire is a major cause of damage by an atomic bomb.

NUCLEAR RADIATION CONTINUED

Since a major effect of the radiation is loss of white blood cells, secondary bacterial infection is a most serious complicating factor.

Deaths due to radiation, however, accounted for only about fifteen percent of the casualties in Japan, while burns were responsible for more than fifty percent. The major reason for this, of course, is that most persons who were near enough to receive a lethal dose of radiation were immediately killed either by the blast and flying debris or by fire.

As mentioned earlier, danger from residual radiation will not occur from an air burst detonation unless it is raining or begins to rain very soon thereafter. In the case of an *under-water* or *near ground* explosion, however, large amounts of contaminated particles will "fall out" of the base surge or atomic cloud. These particles will be more or less widely distributed by the wind, and will cover an egg-shaped area around ground zero in which a lethal dose of radiation could be received. This area would be perhaps two by three miles in its short and long dimensions. It is important in the case of such an explosion to remain in place until dangerously contaminated areas have been identified by properly equipped personnel. Nuclear radiation is not detectable to any of the senses; a Geiger counter is required to establish the intensity of radiation.

EDITOR'S NOTE: The article "We Are Not Helpless" was prepared with the cooperation of the New York Times *whose Science Editor, William Laurence wrote much of the original material. The adaptation for purposes of this story was done by J. R. Dempsey, Washington, D. C.*

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by the Communists said he was an enlisted man.

"I did that to keep them from killing me," he said.

"Everytime an airplane went over they knew they were going to be hit with fire bombs, rockets, or machine guns," said Private First Class Raymond Becker of Milton, Washington. "I believe they were more afraid of jets than anything. They just couldn't understand why they couldn't hear them until they were gone," he said.

Waegwan or "Wigwam," as it was called by the GIs who fought there, was the third stop.

This had been one of the hottest spots in Korea during July and August. During these two months the two divisions holding this area had withstood banzai after banzai attack. But when you ask the GI or officer who was on this front they will tell you the fighter-bombers deserve almost all the credit for holding this area.

"They never gave them any peace," said a sergeant who was there during the worst battles. "Those jets and F-51s hit anything that moved."

After seeing Waegwan one could see exactly what this sergeant meant. The whole area is a giant junk yard, with dead tanks and artillery pieces scattered all over the area.

On one road taken by the 24th Division there were 16 burned out tanks in an area of less than a mile. Though some of these could have been destroyed by the ground forces, most of them were burned hulks on a scorched arc of ground testifying to rocket or Napalm death.

The capital of South Korea, Seoul, was next on my itinerary. Here thousands of refugees were pouring back into the liberated city.

The man-in-the-street in Seoul said the Air Forces had made a liar out of the Communist invaders from the north.

To put it in the words of the average citizen of this ancient, 500 year old capital, when the Air Force came over to bomb or strafe, the people of Seoul knew the UN forces had not forgotten them.

"The B-29s, F-51s, and jets were our only contact with the outside world," said Chung Dai Young. "And every day they came over to bomb or strafe the Communists we knew the UN Forces would come back."

Young was an interpreter for the Officers' Training School for the South Korean Army prior to June 25th. When North Koreans invaded he hid in a cellar for fear of being caught and shot.

"They knew I worked with the Americans before, and I knew if they caught me they would kill me." Young hid in this cellar for the full time the Communists were in Seoul. He was supplied with food by some old women and men.

In describing how Communists acted during a bombing or strafing, Young said, "The Reds halted vehicles when airplanes came over. Individual soldiers often hid with groups of civilians—afraid the airplane pilots would see them and bomb them.

"They really were afraid of jets," he continued, "They called it a Duck plane and everytime they heard one they would act like crazy. They ran around shouting I GU MO NEY, which translated means, help, ouch, or something like that," he said.

Another Korean, an employee of the CIC when US Forces were stationed there last year, stated he had to evacuate Seoul when the first Communists arrived for fear of being executed. This seemed to be a general condition among all young men in Seoul. He said when he returned to Seoul he found all his belongings gone.

"All the windows were broken and all the furniture was stolen, but I can start rebuilding again now I know they won't come back," he said.

Reluctant to give his name, this young Korean went on to say the people of Korea felt they owed a special thanks to the UN Air Force for making a liar out of the Communists.

When asked what he meant he replied, "The so-called Peoples Army of the North said the United Nations were a bunch of weaklings, but everyday the jets, F-51s and B-29s came over to prove they weren't weak and someday they would return."

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mander, had already activated the First Combat Cargo Command, but it was only a paper organization. Tunner's job was to bring it to life with men and planes. The 374th Troop Carrier Wing, stationed with C-54s at Tachikowa, was first to be called up. Next came the Troop Carrier Provisional Group #1—an odd collection of C-46s and 47s Tunner scraped together from all over the island. But it still wasn't enough.

Back to the US went a hurried call for the 314th Troop Carrier Group (C-119s) at Sewart AFB, Smyrna, Tenn. Tunner was going to give the Packets their first real test of combat.

Three weeks later the Boxcars were on the spot in Tokyo and ready. In the meantime they had flown from Sewart to Hagerstown, Md., to be equipped with long range fuel tanks (which in turn had to be flown to Hagerstown from California), gone back to Sewart to pick up spare crewmen and parts, and then taken off for Tokyo via California, Hickam, Johnston, Kwajalein and Guam.

When the time came to move out, the First Combat Cargo Command performed its assignment so smoothly and with so little fuss that it went all but unnoticed in the press back home. The Boxcars themselves moved over 7000 troops and 7500 tons of cargo in the first four weeks. Piece by piece they also flew a complete bridge to the front to be stretched across the Han River for the Yanks moving back into Seoul. The 46s, 47s and 54s of the other units performed as well as they always had—in Berlin, over the Hump, in Africa and elsewhere.

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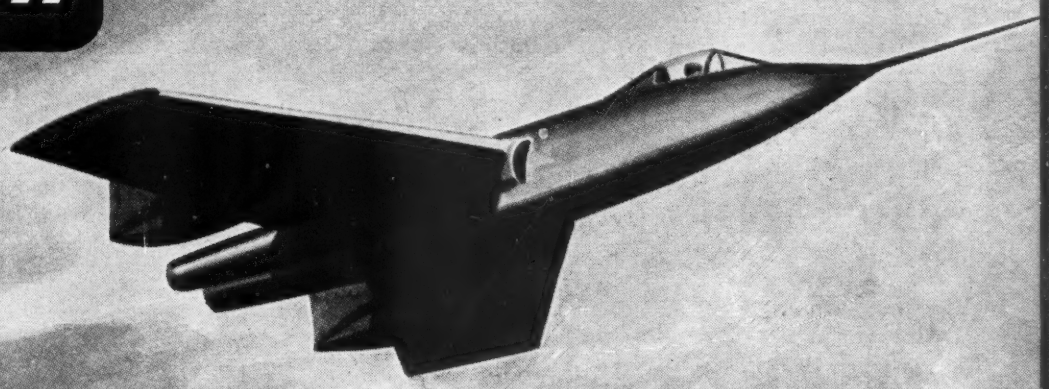

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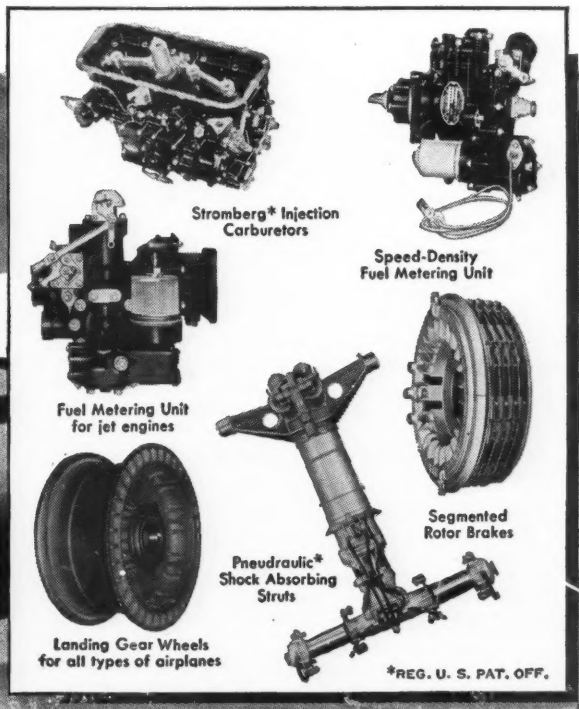
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